College of Medicine & Health Sciences
and
Sultan Qaboos University Hospital

2014
Annual Report
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Dean’s Message

It is my pleasure to present to you the report of the College of Medicine & Health Sciences (COM&HS) and the Sultan Qaboos University Hospital (SQUH) for the year 2014. The College of Medicine was founded in 1986 and became the COM&HS in 2002. From the beginning, the COM&HS and 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 healthcare institutions in Oman.

Subsequent to the accreditation of the M.D. Programme by the Association for Medical Education in the Eastern Mediterranean Region in cooperation with the World Federation for Medical Education for a 10-year period, the College has initiated the accreditation process for the Biomedical Sciences Programme by the Institute of Biomedical Sciences, UK, which is well underway.

I would like to thank all staff members of the College, SQUH and the higher Administration for their support. I do appreciate the achievements of all individuals and departments who are building up a strong foundation of the institution for a better future.

I hope this report serves as a source of inspiration for everybody to aim for and achieve higher goals.

Professor Omar Al-Rawas
Dean, College of Medicine & Health Sciences & Chair, Sultan Qaboos University Hospital Board
Executive Summary

The College of Medicine & Health Sciences (COM&HS) and the Sultan Qaboos University Hospital (SQUH) continue to expand and develop their educational and clinical mission. This report documents their activities and achievements during 2014.

Education

In 2014, the COM&HS admitted into the M.D. programme a total of 132 students. Following successful completion of the Phase II of the M.D. programme, 115 students joined the clinical Phase III of the M.D. programme in September 2014. The training of B.Sc. Biomedical Sciences students is also among the responsibilities of the COM&HS and SQUH; there were 25 graduates in 2014, all of whom were female.

The COM&HS and SQUH graduated a total of 105 medical doctors in 2014. A total of 76 students have now graduated from the College's Master's programme in Biomedical Sciences, 11 of them in 2014. There are currently five Ph.D. students, three of whom graduated in 2014. The number of medical doctors joining the Oman Medical Specialty Board (OMSB) for postgraduate training, under the academic supervision of the COM&HS and SQUH, was 128 in 2014. These postgraduates joined 18 training programmes in different specialties. In 2014, the University also sponsored full scholarships for two Ph.D. students and three Master's students for between 1–5 years of training abroad (locations including Canada and the UK). The number of M.D. graduates who went abroad for residency and fellowship training in 2014 was nine while eight returned from training in this same year.

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

Research

In 2014, the COM&HS and SQUH saw a major increase in research activity. It undertook 199 research projects (compared to 180 in 2013) for a total value of OR 1,001,009.750. In 2014, staff of the College and Hospital published a total of 385 research articles and eight book chapters. In the same period, College and Hospital staff made a total of 230 conference and seminar presentations. Of these, 50 were international oral presentations and 66 were international poster presentations. Also, 89 student theses were supervised. The COM&HS and SQUH organised nine major conferences and nine seminars or workshops in 2014.

Clinical Activity

By the end of 2014, 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 nine scholars went abroad for their studies in 2014.
- Continuous professional development policy established for doctors in fellowship and training.
- Purchase, commissioning and installation of different types of new equipment.

The Hospital decided to go ahead for accreditation by inviting Accreditation Canada International to assess and implement the Canadian accreditation system at SQUH.

By the end of 2014, the Hospital staff had increased to 2,832 employees including 447 doctors, 1,237 nurses, 507 technicians and 631 administrative/support staff.

Clinical activity at SQUH expanded in all areas. Outpatient visits were 297,424 compared to 124,206 in 2013 and inpatient admissions were 28,685 compared to 32,525 in 2013. The average length of stay increased slightly to 5.5 days. The number of day care patients was 14,944 compared to 14,566 in the preceding year. Finally, newborn live deliveries showed a 15.2% increase from 3,812 in 2013 to 4,540 in 2014.

Natasha Smith
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:

Sheerajoy Biruar, Design and layout
Alaister Denoyo, Photography
Charlotte Woon, Proof reading
Anne Menard, Proof reading
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.

College Board

The College Board met 10 times (eight regular meetings and two extraordinary meetings) between January and December 2014. The following key matters were discussed:

STRATEGIC ISSUES

[1] University Council approval for the establishment of Sultan Qaboos University (SQU) Academic Health Science Centre comprising of the College of Medicine & Health Sciences (COM&HS); College of Nursing; Sultan Qaboos University Hospital (SQUH); and any future health science colleges.


AWARDS AND RECOGNITION

[4] The College was awarded the Sheikh Hamdan Award for the Best Medical College in the Arab World for 2013–2014. The award was comprised of a souvenir, a Certificate of Commendation and a cash award of DHS 450,000.

[5] Significant achievements were made by COM&HS students at the 9th International Scientific Conference for Medical Students in the GCC Countries held in Al Ain, UAE, from 29 March–2 April 2014. The Best Prize in Research was won by two COM&HS students, Assad Al-Habsi and Latifa Mutawa.

ADMINISTRATION

[14] College Retreat was held on the 6 December 2014 at the Barr Al Jissa Shangrila Hotel.

[15] Constitution of a Task Force with membership from the COM&HS, College of Nursing and SQUH to look into improving the organization of conferences/symposia and workshops by COM&HS and SQUH.


Conferences, Symposia, Workshops and Courses

During the year 2014, the College organised nine major conferences or symposia and conducted nine workshops or courses [Tables 1 and 2].
### Table 1: Conferences or symposia organised in 2014

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<th>Organiser</th>
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<td>Cardiac Imaging Conference</td>
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<td>29–30 Jan 2014</td>
<td>3rd Advanced General Medicine Conference 2014</td>
<td>Jointly by the Royal College of Physicians, MOH and the University</td>
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<td>19–20 Feb 2014</td>
<td>1st Surgical Pathology Update</td>
<td>Pathology Department</td>
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<tr>
<td>9–11 Mar 2014</td>
<td>2nd International Conference in Human Genetics: Genetics in developing countries - Unique challenges and opportunities</td>
<td>Genetics Department</td>
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<tr>
<td>20–21 Nov 2014</td>
<td>1st Sickle Cell Disease Conference</td>
<td>Haematology Department in collaboration with the MOH and Oman Hereditary Blood Disorders Association</td>
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<tr>
<td>26 Mar 2014</td>
<td>National Symposium on Ocular Genetics and Strabismus: Bridging the Gaps</td>
<td>Ophthalmology Department</td>
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<tr>
<td>7–8 Nov 2014</td>
<td>1st Oman NYSORA International Symposium on Regional Anesthesia</td>
<td>Anaesthesia Department in collaboration with the New York School of Regional Anesthesia</td>
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<td>20 Dec 2014</td>
<td>7th ICET Symposium on International Network of Clinicians for Endocrinopathies in Thalassemia and Adolescence Medicine)</td>
<td>Child Health Department</td>
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MOH = Ministry of Health.

### Table 2: Courses or workshops organised in 2014

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<td>Student Assessment Workshop</td>
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<td>Faculty Development Workshops</td>
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<td>30 Apr 2014</td>
<td>Workshop on Image Editing &amp; Manipulation for Medical Purposes</td>
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<td>Workshop on NAACLS Accreditation Standards</td>
<td>Accreditation &amp; Quality Management Committee</td>
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<td>15–24 Nov 2014</td>
<td>Advisory Workshop for Electron Microscopy Unit</td>
<td>Pathology Department facilitated by Prof. Klaus Leifer with group from JEOL Team, Sweden</td>
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<td>30 Nov–3 Dec 2014</td>
<td>Open Tibial Fractures Course</td>
<td>Surgery Department</td>
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<td>28 Dec 2014–6 Jan 2015</td>
<td>Advisory Workshop for EM</td>
<td>Pathology Department facilitated by Prof. Klaus Leifer with group from JEOL Team, Sweden</td>
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NAACLS = National Accrediting Agency for Clinical Laboratory Sciences.
College of Medicine & Health Sciences - Overview

Staff

Dean
Omar A. Al-Rawas, Professor

Office of the Dean
Sagar Hussain, Executive Assistant
Amal Al-Jassasi, Clerk
Hiba Al-Hashim, Clerk
Qassim Al-Salhi, Clerk

Office of the Assistant Dean for Preclinical Affairs
Ibrahim Inuwa, Assistant Dean
Muna Al-Alawi, Academic Affairs Officer
Zulfa Al-Busaidi, Student Affairs Officer
Shabbir Patel, Coordinator
Turkiya Al-Amri, Clerk

Office of the Assistant Dean for Clinical Affairs
Arunodaya Gujjar, Assistant Dean
Glorio Almeida, Coordinator
Aisha Al-Wardi, Clerk, Clinical Electives Office
Madiha Al-Abri, Coordinator for Affiliated Hospitals

Office of the Assistant Dean for Research & Postgraduate Studies
Khalid Al-Balushi, Assistant Dean
Asma Al-Siyabi, Coordinator
Fauzia Al-Abrawi, Clerk

Office of the Assistant Dean for Training & Community Service
Yahey Al-Farsi, Assistant Dean
Aisha Al-Senaidi, Clerk, Medical Internship Programme Office
Khazina Al-Jahafi, Clerk, Medical Internship Programme Office

Office of the Director of Administration
Mohamed Al-Bulushi, Director
Mahmoud Al-Abri, Assistant 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
Hisham A. Hadi, IDEAL Administrator
Nasser Al-Mufarji, Coordinator (on study leave)

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

Other Units
Medical Library
Medical Education & Informatics Unit
Clinical Skills Laboratory
Sultan Qaboos University Medical Journal
Small Animal House Facility

Mission and Vision Statements

MISSION
The Mission of the COM&HS at Sultan Qaboos University is to provide Oman with competent doctors and health scientists who are able to pursue further specialisations. The College is committed to creating a scholarly environment that supports innovation and excellence in teaching, research and postgraduate training. Through the hospital, the College will contribute significantly to the provision of high-quality patient care and community health services.

VISION
The COM&HS aspires to international prominence in medical education, advancement in biomedical sciences and health research.

Core Values
Excellence; Transparency; Accountability; Creativity and Innovation; Respect to All; Quality Service; Integrity; Flexibility; Team Work and Collaboration; and Public Trust and Confidence.

Training Human Resources
The training of COM&HS staff in reputable institutions abroad is a key vision of the College.

Recognition
In June 2014, the M.D. Programme was accredited jointly by the Association for Medical Education in the Eastern Mediterranean Region in cooperation with the World Federation for Medical Education for a 10-year period. Furthermore, the College has initiated the accreditation process for the B.Sc. in Biomedical Sciences (BMS) Programme by the Institute of Biomedical Sciences, UK.
Education Programmes
The COM&HS offers four degree options:

1) M.D. Degree
This degree comprises of Phases I, II and III, the successful completion of which awards the student with an M.D. degree in a minimum of 6 years.

2) M.D. and B.Sc. in Health Sciences
Students earn a B.Sc. Health Sciences degree by successfully completing Phases I, II and the Intercalated Phase. Students whose overall cGPA in Phases I and II is 2.5 or higher have the option of completing Phase III to obtain the M.D. degree.

3) B.Sc. in Health Sciences
This degree is awarded to students who successfully complete Phases I and II with a cGPA of 2.49 or less and then successfully complete the Intercalated Phase.

4) B.Sc. in Biomedical Sciences
The BMS programme consists of four years of intensive coursework followed by practical exposure through clinical placement.

M.D. PROGRAMME
The aim of the M.D. Programme is to produce undifferentiated physicians who are prepared to serve the fundamental purposes of medicine and satisfy the contemporary requirements of medical practice and professionalism. The structure of the programme has three main phases, each with a specific goal (Phases I, II and II) which lead, when completed successfully, to the award of an M.D. degree.

Phase I includes university requirement courses and a number of courses designed to assess a student’s ability to study medicine. The two other phases (Phases II and III) represent the medical component of the M.D. Programme. Phase II begins by establishing the necessary scientific knowledge base. It includes one semester for courses to enhance the knowledge base and three semesters of system courses to help integrate scientific and clinical information. In addition, there are supplementary courses, such as medical informatics and research. Finally, Phase III is a patient-oriented phase that prepares students for the practice of medicine.

An eight-week elective placement programme is part of the second stage of Phase III 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.

In addition to the above three phases, the Intercalated Phase is designed to develop research skills and knowledge of health-related sciences. Successful completion of this phase entitles the student to a B.Sc. degree in Health Sciences.

B.S.C. BIOMEDICAL SCIENCES PROGRAMME
The curriculum of the BMS programme offered by the COM&HS aims to train undergraduate students to become successful biomedical scientists, thereby augmenting the excellence of healthcare in Oman. The curriculum encompasses both theoretical and hands-on laboratory training in a clinical setting, provided in the disciplines of biochemistry, haematology, microbiology and cellular pathology. The programme runs for four years following the foundation course.

In order to keep up-to-date with progress in biomedical research endeavours made both locally and globally, a comprehensive research module is included in the curriculum, allowing students to outline research proposals and perform basic research and data analysis. Additionally, in order to inculcate a high standard of laboratory work ethics and clinical judgment, appropriate classes or modules have been included in the curriculum. As biomedical scientists work in a dynamic and evolving environment and use technological equipment to provide information that must be processed rapidly and accurately, suitable courses on laboratory management and quality control have been introduced into the programme in recent years. Successful fulfilment of the objectives of the programme requires evidence of competence. Therefore, the programme involves a mandatory clinical placement for six weeks, whereby students are required to train at an approved listed health centre or hospital in Oman. They then train further in clinical laboratory techniques in one of the above designated disciplines, as well as demonstrate competence during real-life experiences in a clinical locale.

Graduates of this programme can be employed in diagnostic hospital laboratories or healthcare and research laboratories investigating biological and health sciences. They can, alternatively, pursue Masters and Ph.D. programmes to achieve academic positions in institutions of higher education.

INTERNSHIP TRAINING
Internship training is compulsory for all graduates passing the M.D. and consists of three rotations of four 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 COM&HS. It is managed by the COM&HS and caters not only to SQU graduates but also those from other medical programmes in Oman; Omani graduates trained in institutions abroad may also apply. Currently about 230 graduates undergo internship training each year.
POSTGRADUATE STUDIES

All of the current Master’s programmes in the College are two-year full-time programmes. Eight departments have been granted the option of offering the following M.Sc degrees: Biochemistry & Molecular Biology; Clinical Biochemistry; Clinical Pharmacy; Epidemiology; Human & Clinical Anatomy; Medical Microbiology; Clinical Physiology; Genetics; and Medical Physics. Since 2011, five departments offer MSc programmes, including the Departments of Biochemistry, Family Medicine & Public Health, Microbiology & Immunology, Pharmacology & Clinical Pharmacy and Physiology.

The Ph.D. programmes are research-based programmes aimed at developing research expertise in different specialisations and equipping students with relevant skills. Coursework is prescribed if deemed necessary. In addition to participation in and oral defense of a thesis, the programmes also require presentation of a detailed research plan, attendance at a minimum of two departmental seminars and acceptance of at least one paper for publication in an international journal. The College now offers the following three Ph.D. programmes: Biochemistry & Molecular Biology; Medical Microbiology; and Genetics.
Sultan Qaboos University Hospital (SQUH) is the only teaching hospital in Oman. Of a total of 693 beds, it currently has 489 beds in use, with 99 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 2014, 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. Two kidney transplants were done in 2014. A total of 297,424 outpatients and 28,685 inpatients were seen in the course of 2014. The staff strength as of December 2014 stood at 2,822 employees, comprising 447 doctors, 1,237 nurses, 507 technical staff and 631 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 of the College of Medicine & Health Sciences (COM&HS), 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 2014, much discussion was devoted to accommodating the significant increase in patient flow and maintaining standards of research, teaching and service in the face of continued budget constraints.

Staff

Hospital Director-General  
Abdullah Al-Asmi, Senior Consultant

Deputy Director-General (Clinical Affairs)  
Abdullah Al-Harthy, Senior Consultant

Deputy Director-General (Admin. & Finance)  
Ahmed Al-Kindi

Deputy Director (Nursing Affairs)  
Shinoona Al-Harthy

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  
Nada H. Z. Al-Amri, Clerk  
Thekrayat K. S. Al-Farsi, Clerk  
Ahmed Al-Rusheidi, Chief Messenger Supervisor  
Mohamed S. Al-Hadhrami, Senior Messenger  
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 COM&HS with the continued support of the University administration.

Pioneer in Healthcare Services

By the end of 2014, the Hospital was opened at full capacity after the following developments:

- Significant development and increase in different clinical specialities and services
- Eight highly-specialised doctors returned from abroad while nine scholars went abroad for their studies in 2014.
- Continuous professional development policy for doctors in fellowship and training.
- Purchase, commissioning and installation of different types of new equipment such as:
  - Chromoscan (cytogenetic workstation)
  - Slit lamp
  - Surgical slush for tissue cooling
  - Neonatal ventilators
  - Syringe pumps for anaesthesia
  - Continuous positive airway pressure systems, nasal
  - Pneumatic neurosurgical drill system
  - Blood gas analysers
  - Ear, nose and throat navigation system
  - Lipp-Golecki® airway management set
  - Left ventricular devices
Training Human Resources

The training of Omani professionals in reputable institutions abroad is a continuing policy of SQUH/COM&HS. In this regard, approximately 5–10 physicians are sent overseas to Canada, the USA, Australia, the UK and other locations on a yearly basis to acquire residency training, fellowship training and higher academic degrees. A total of approximately 120 doctors have benefited from this scheme in recent years. Most of the current Omani senior medical personnel in SQUH are beneficiaries of these training and empowerment strategies. In the year 2014, eight medical doctors who obtained their postgraduate medical training from institutions overseas returned to SQUH while nine others were sent abroad to acquire training in different specialisations in the same year. Also, the continuous professional development (CPD) system was completed and established.

A total of 197 members of staff from different departments attended external courses conducted by the Directorate of Training & CPD in 2014. A total of 980 members of staff (815 Omanis and 165 non-Omanis) attended 32 unscheduled in-house courses. A total of 4,024 participants attended 31 scheduled in-house courses conducted in 2014.

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. Striving for better quality, the Hospital decided to go ahead for accreditation by inviting Accreditation Canada International to assess and implement the Canadian accreditation system at SQUH.

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 six-floor Haematology centre (project in progress)
- Emergence Department extension (project in progress)
- Administration building (currently with the Tender Board)
- Centralised intravenous admixture project
- Annex building next to Haematology Centre
- Extension to the Central Sterile Supplies Department.

Future Development

- Outpatient Department building
- Nuclear Medicine Centre
- 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 2014.

The role of SQUH as a major Omani health service provider continued in this period with a total of 297,424 outpatients and 28,685 inpatients seen during the year. A total of 17 bone marrow transplants were done in 2014.

The number of day care patients in 2014 was 14,944 compared to 14,566 recorded in the preceding year. The use of day care services 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 decreased by 13.4% in 2014 to 28,685 compared with the previous year. The average length of stay for the year 2014 was 5.5 days, which was half a day higher than the previous year.

Finally, newborn live deliveries stood at 4,540, comprising of 2,324 males, 2,216 females and one undetermined. This was an increase of 15.2% over the 2013 figure of 3,852 total live newborns.
The Department of Anaesthesia, Intensive Care Unit (ICU) & 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 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 this Department. The Department forms an integral part of the SQUH Trauma and Disaster management services.

The Pre-anaesthesia Assessment Clinic (PAC) has been functional since March 2009 and is open five days a week. The PAC acts as a centralised preoperative facility site one-stop clearance center for patients undergoing elective surgery. Patients who have to undergo surgery are assessed here for surgical fitness at the outpatient department (OPD) level. It yields high levels of patient and surgical satisfaction and is now an integral part of the modern multimodal recovery programme. The Pain Clinic functions two days a week and provides outstanding patient-centred pain management for those with chronic pain.
Annual Report 2014

Staff

Head of Department
Mohamed Al-Ismaili, Consultant

Faculty
Karin Nollain, Senior Consultant
Suresh Chengode, Senior Consultant
Sinnakirouchenan S., Senior Consultant
Rajini Kausalya, Senior Consultant
Nasser Al-Kemyani, Senior Consultant
Amarnath Shetty, Consultant
Ali Al-Abady, Consultant
Ram N. Rao, Consultant
Intisar Al-Macki, Consultant
Jasvinder Sharma, Consultant
Binoy Zachariah, Senior Specialist
Rahul Shabadi, Senior Specialist
Pradeep K. Sharma, Senior Specialist
Jyoti Burad, Senior Specialist
Ram N. Rao, Consultant
Intisar Al-Macki, Consultant
Jasvinder Sharma, Consultant
Binoy Zachariah, Senior Specialist
Rahul Shabadi, Senior Specialist
Pradeep K. Sharma, Senior Specialist
Jyoti Burad, Senior Specialist
Devaraj N. Dyamanna, Senior Specialist
Aravind Narayanan, Senior Specialist
Hatim A. El-Ghany, Senior Specialist
Sanath Kumar, Senior Specialist
Rohit Date, Senior Specialist
Chandar Lal, Specialist
Nisha John, Specialist
Babji Kalapati, Specialist
Ajai K. Arora, Specialist
Pardeep Kumar, Specialist
Sonali Kodange, Specialist
Abdur R. Abid, Specialist
Wael Riad, Specialist
Mohammed Hatab, Specialist
Sheebu P. A., Specialist
Darshana Rathode, Specialist
Zahra G. Ahmed, Specialist
Ziad Waadallah, Specialist
Shaikh K. Shakeer, Specialist
Saneesh P. J., Specialist
Ayesha Mohinuddin, Specialist
Nigel Kuriakose, Senior House Officer

Support Staff
Leena Chacko, Coordinator
Ibrahim Al-Farsi, Coordinator

Technicians
Mohammed Al-Badi, Anaesthesia Technician
Maheswariamma, Anaesthesia Technician
Subathara Varadarajan, Anaesthesia Technician
Kingsly Prabhkaran, Respiratory Therapist
Sathyanaranay 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 2014

TRAINING PROVIDED
The Department organised an international workshop on Ultrasound-Guided Regional Anaesthesia in collaboration with the New York Society of Regional Anaesthesia (NYSORA) in November 2014 at Sultan Qaboos University. This educational activity was the first of its kind in the country, with SQUH pioneering ultrasound-guided regional anaesthesia. This workshop was attended by anaesthesiologists and residents from all over Oman. The response was positive and the workshop very successful.

NEW SERVICES
Anaesthesia for magnetic resonance imaging (MRI) and interventional radiology were new services introduced in 2014. In order to cater for an increasing workload and long waiting lists, the MRI Clinic was opened. This clinic functions one day a week and allows patients to be attended to by senior anaesthesiologists. In addition, the Department extended services to different areas, including:

- Extending operative times for ear, nose and throat surgeries on Sundays until 8:00 pm;
- Extending operative times for orthopedic surgeries on Tuesdays and Thursdays from 3:30 until 8:00 pm.
- Allocating a separate team of intensivists to independently run the ICU during and after working hours.
- Providing anaesthetic services for 1–2 paediatric MRI patients on days other than designated Thursdays.
- Allocating additional anaesthetics for emergency obstetric/gynaecological procedures from 3:00 until 10:00 pm.
- Providing separate anaesthetic coverage for emergency neonatal surgeries on a daily basis, including on weekends and public holidays.

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 practise of regional anaesthesia. The Department is proud to have introduced this new service as well as that of vascular access under ultrasound guidance.

NEW SUBSPECIALTY
The subspecialties of neuroanaesthesia and paediatric anaesthesia are functioning well. In paediatric anaesthesia, we are doing several procedures on small babies, including extremely preterm babies; some of these procedures are being done for the first time in Oman.
Teaching Programmes

UNDERGRADUATE TEACHING – NEW CURRICULUM

The Department is involved in teaching the integrated module and preclerkship, junior clerkship and senior clerkship programmes. For their Junior Clerkship, students are posted in the operating room for one week. They spend another week in the ICU doing their senior clerkship 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 helping the students understand the use of airway adjuncts, respiratory equipment, central venous and arterial cannulation, regional blocks and drugs used in anaesthesia as well as cardiopulmonary resuscitation.

POSTGRADUATE PROGRAMME

Oman Medical Specialty Board OMSB

A four-year residency programme in anaesthesia was started in September 2007 under the Oman Medical Specialty Board (OMSB). After successful completion, the residents will do a further year of specialised training. The Department is actively involved in teaching anaesthesia programme residents, evaluating and assessing them on a regular basis. Some members of the Department are in the Scientific Committee of this programme. There is an assistant programme director on-site to ensure the smooth running of the training.

Training Courses & CME Activities

The Department is actively involved in the teaching of courses organised by the SQUH Directorate of Training & Continuing Professional Development (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 CPD 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 CPD activities and scientific sessions.

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<th>Orthopaedic</th>
<th>Dentistry</th>
<th>ENT</th>
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ENT = ear, nose and throat.

Table 1: Number of patients seen in the Pre-Antiaesthesia Assessment Clinic in 2014

ACADEMIC AND PATIENT CARE DEPARTMENTS

Anaesthesia, ICU & Pain Management 13
Clinical & Diagnostic Services

A total of 7,105 anaesthetic procedures were carried out in 2014 compared to 7,039 in 2013 and 6,668 in 2012. In 2014, a total of 4,462 elective cases were carried out as well as 2,643 emergency cases. Additionally, a total of 781 patients were seen in the Pre-Anaesthesia Assessment Clinic.

Research

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

National

1. Narayanan A. Brain fogging—Post operative cognitive dysfunction after general anaesthesia: Malady or myth? IBRI National Anaesthesia Seminar (OMSB), Muscat, Oman, 29 Mar 2014.


Seminar Presentation

Behavioural Medicine

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 diagnoses and research on behavioural medicine in Oman. For its clinical services, the Department provides state-of-the-art treatment and care for 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 adolescent 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 biological, 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 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
Marwan Al-Sharbaty, Associate Professor
Ziad A. J. Zaidan, Associate Professor
Harith Al-Ghassany, Assistant Professor
Ather S. Jafri, Senior Consultant
Hamed Al-Sinawi, Senior Consultant
Rodger Martin, Senior Consultant
Ahmed S. B. Amer, Consultant
Amre El-Guenedi, Consultant
Ahmed Al-Harrasi, Senior Specialist
Yousif A. Obeid, Senior Specialist
Amaal Ambusaidi, Senior Specialist
Amira Al-Hosni, Specialist
Aziz Al-Naamani, Specialist
Hassan Mirza, Specialist
Nonna Viernes, Specialist
Ibrahim Elzein, Senior House Officer
Mohammed Al-Alawi, Senior Medical Officer
Zena M. Al-Sharbati, Clinical Psychologist
Samira Al-Hamdan, Psychologist
Abdullah Al-Sulaimani, Social Specialist
Ahmed Al-Salmi, Social Specialist
Khamis Al-Balushi, Social Specialist
Khoula Al-Wahaibi, Social Specialist
Salwa Al-Redha, Social Specialist
Younis Al-Hashim, Social Specialist

Support Staff
Ravindran Kozhapatil, Coordinator
Govindan Mundayadan, Coordinator

Highlights of the Year 2014

As in previous years, the year 2014 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 present curriculum 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. As a result of these efforts, the residency programme has secured provisional accreditation by the Oman Medical Specialty Board (OMSB). Among the highlights of the year, the Department was instrumental in helping Sultan Qaboos University Hospital (SQUH) secure the golden level of healthcare institutions by Accreditation Canada International.

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 different aspects of behavioural, cognitive and emotional functioning among the Omani population. The Department has secured grants in collaboration with others to examine some of the unmet needs for people with cognitive, emotional and behavioural disorders in the country. Some preliminary data as well as a Ph.D. project have been completed in order to lay the groundwork for evidence-based practice to mitigating a variety of emotional, cognitive and behavioural disorders.

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 to increase awareness of the predicament faced by elderly people. In this context, the Ageing and Dementia Research Group was formed in order to advance research on Alzheimer’s and dementia, create a venue to discuss care for those living with this disease and to establish a self-help group for caregivers.

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

It is within this background of excellence that the College of Medicine & Health Sciences was lauded as the “best medical College in the Arab world” when it won the Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences in November 2014.

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; to expose students to the empirical evidence that distress, disease and treatment are experienced in the context of cultural and social processes; and to introduce the idea of integrating mental health services into primary
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 the 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 invited as part of this endeavour.

**Development of Medical Curriculum**

The Department has been active in developing its present curriculum for the new medical degree programme. Behavioural medicine lectures, tutorials and seminars are now fully integrated into the preclinical system modules of Phases I and II and the integrated modules. The Phase III clinical curriculum for behavioural medicine is being developed. Its primary focus is on the preclerkship 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 preclerkship 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 preclerkship 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 & Public 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 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 parts 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 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 number of referral questions. Referrals to our services typically consist of, but are not limited to, questions concerning: (a) differential diagnoses.
### Table 1: Inpatient diagnoses in 2014

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<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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<td><strong>Total admissions</strong></td>
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<td><strong>Total LAMA</strong></td>
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</table>

*ADHD = attention deficit hyperactivity disorder; LAMA = leaving against medical advice.*
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**

**Code:** RC/AGR/FOOD/11/01  **Dates:** 2011–2014  **Value:** OR 201,000  **Funder:** The Research Council Oman

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

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**Table 2: Outpatient statistics in 2014**

<table>
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<tr>
<th>Service</th>
<th>Appointments</th>
<th>Patient seen with appointment</th>
<th>Patient seen without appointment</th>
<th>Total seen</th>
<th>Admissions</th>
<th>Discharged</th>
<th>Did not attend</th>
<th>Treatment/injection</th>
<th>Counselling</th>
<th>Blood work</th>
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<td>New</td>
<td>Old</td>
<td>New</td>
<td>Old</td>
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**Table 3: Inpatient statistics in 2014**

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<th>Apr</th>
<th>May</th>
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<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
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<td>IQ testing</td>
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**ACADEMIC AND PATIENT CARE DEPARTMENTS**

**Behavioural Medicine** 19
Internet addiction in a sample of secondary and university Omani students

**Code:** RC/ART/INFO/11/01  **Dates:** 2011–2014  **Value:** OR 82,000  **Funder:** The Research Council Oman

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

Patient satisfaction with psychiatric out-patient services at Sultan Qaboos University Hospital

**Code:** MREC #852  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Rodger Martin, Dept. Behavioural Medicine, SQU.

Prevalence of depressive symptoms among medical students at Sultan Qaboos University in Oman

**Code:** MREC #893  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Yousif Obeid, Dept. Behavioural Medicine, SQU.

Prevalence of metabolic syndrome in psychiatric patients prescribed olanzapine and risperidone, SQUH, Oman

**Code:** MREC #894  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigators:** Dr. Yousif Obeid, Dept. Behavioural Medicine, SQU.

Rate predictors of early readmission of patients in tertiary mental hospitals in Oman: A retrospective study

**Code:** MREC #901-A  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Hamed Al-Sinawi, Dept. Behavioural Medicine, SQU.

Validating Arabic version of the Addenbrookes Cognitive Examination Revised (ACE-IIR)

**Code:** MREC #904  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Hamed Al-Sinawi, Dept. Behavioural Medicine, SQU.

Neurocognitive functioning in an Oman patient presenting with cacodemonomania

**Code:** MREC #907  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Prof. Samir Al-Adawi, Dept. Behavioural Medicine, SQU.

The “objectivity” of Objective Structured Clinical Examination (OSCE)

**Code:** MREC #948  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Marwan Al-Sharbati, Dept. Behavioural Medicine, SQU.

Forward continuity of attention deficit hyperactivity disorder (ADHD) in Omani children: Continuity of symptoms and rate of school drop-out

**Code:** MREC #965  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Hassan Mirza, Dept. Behavioural Medicine, SQU.

The effect of faith healing in managing Omani adult psychiatric patients at SQUH

**Code:** MREC #1000  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Prof. Ala’Aldin Al-Hussaini, Dept. Behavioural Medicine, SQU.

**RESEARCH PUBLICATIONS & BOOKS**

**Journal Publications**


Books & Book Chapters


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

International


National


Poster Presentations

International


5. **Al-Sharbati M**, Al-Saadoon M, Al-Farsi Y, Rizvi S, **Al-Adawi S**. Bullying, psychology and emotions among Omani adolescents in Muscat schools. World Psychiatric Association (WPA) 16th World Congress of Psychiatry, Madrid, Spain, 14–18 Sep 2014.


**Seminar Presentations**

**International**


**National**


3. **Al-Adawi S**. Workshop: Neuropsychological assessment. 9th GCC Neurology Conference, Sultan Qaboos University, Muscat, Oman, 6–8 Nov 2014.

4. **Al-Adawi S**. Workshop: Breaking bad news: Approaching the families of potential organ donors. 2nd Workshop on Deceased Donor and Organ Transplantation, Oman National Transplant Committee, Royal Hospital, Muscat, Oman, 21–24 Dec 2014.

**Thesis Supervision**

**Student Name**: Aziz Al-Naamani  
**Qualification**: Ph.D.  
**Title**: Neuropsychiatric syndrome in Oman among the victims of acquired brain injuries  
**Supervisor**: Prof. Samir Al-Adawi  
**Date of completion**: Jun 2014

**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-Sharbati  
**Date of completion**: On-going

**Student Name**: Najma Al-Kindy  
**Qualification**: Ph.D.  
**Title**: The impact of postnatal nutrition and oxidative stress on the etiology of autism spectrum disorder in Oman  
**Supervisor**: Dr. Marwan Al-Sharbati  
**Date of completion**: On-going
The mission of the Biochemistry Department is to maintain excellence in service, teaching and research. The Department is involved in both preclinical and clinical teaching. In the preclinical years, teaching concentrates mainly on basic principles of biochemistry and metabolism. Teaching in the clinical years is devoted to clinical chemistry, including the interpretation of biochemical data of 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 umbrella 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 Oman. A total of 21 biomedical scientists serve the Department at SQUH.
Staff

Head of Department
Khalid Al-Rasadi, Senior Consultant

Deputy Head of Department
Khalid Al-Waili, Senior Consultant

Faculty
Riad Bayoumi, Professor
Nadia Al-Wardy, Associate Professor
Jumana Saleh, Associate Professor
Hamza Babiker, Associate Professor
Yajnavalka Banerjee, Associate Professor
Clifford Abiaka, Assistant Professor
Marit Delghandi, Assistant Professor
Yahya Tamimi, Assistant Professor
Fahad Al-Zadja, Assistant Professor
Nafila Al-Riyami, Senior Consultant

Support Staff
Mohammed Al-Kindi, Superintendent (College)
Halima Aidid, Superintendent (Clinical)
Mater Al-Maney, Chief Biomedical Scientist (Clinical)
Adil Al-Wahaib, 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-Khanhashi, College
Taruna Dutt, Coordinator (College)
Marina Bendecio, Coordinator (Clinical)

Highlights of the Year 2014

In the year 2014, Dr. Khalid Al-Waili was promoted to Senior Consultant and also designated as Deputy Head of the Department. Prof. Riad Bayoumi and Dr. Clifford Abiaka left the Department. Dr. Yajnavalka Banerjee was promoted to Associate Professor. Dr. Nafila Al-Riyami was promoted to Senior Consultant.

Teaching Programmes

UNDERGRADUATE MEDICAL PROGRAMMES
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 Haematopoietic System, Endocrine System, Respiratory System, Tissues, Urinary System, 7th year clinical rotations, the Integrated Lecture Series and the student Research Project.

B.Sc. Medical Laboratory Sciences (MLS)
The Department is teaching five courses in the MLS degree in semesters six 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 PROGRAMME
In the postgraduate programme, the Department offers the following four courses: Biochemical Basis of Disease; Instrumentation & Biochemical Techniques; Molecular Biology, and Methodology in Clinical Biochemistry. During 2014 to 2015, the Department had 10 students registered for an M.Sc. degree and nine 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. Services are provided to SQUH on a 24-hour basis. The number of tests performed from January to December 2014 was 1,769,381 (12.6% increase compared to 2013).

The Department also manages commercial laboratory services offered to selected hospitals within the private sector, e.g. Muscat Private Hospital and Badar Al-Samaa Polyclinic.

NEW TESTS
Several tests that used to be referred to a commercial laboratory in France (Biomnis, Lyon, France) are now performed in-house. This includes free light chain from binding site using Cobas® equipment (Roche Diagnostics Ltd., West Sussex, UK) and anti-immunoglobulin (Ig) E and anti-IgD on immunofixation electrophoresis.

POINT-OF-CARE TESTING
The Department maintains quality assurance of 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

Use of radionuclide-based molecular methods for detection of imported drug resistant malaria in Oman

**Code:** OMA2014003 **Dates:** 2014–2016 **Value:** USD 300,000 **Funder:** International Atomic Energy Agency

**Investigator:** Dr. Hamza Babiker, Dept. Biochemistry, SQU.

**Asian regional capacity development for research on social determinants of health**

**Code:** EG/MED/FAMH/11/01 **Dates:** 2011–2015 **Value:** EUR 78,602 **Funder:** European Commission

**Investigators:** Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU; Dr. Abdullah Al-Muniri, Dept. Family Medicine & Public Health, SQU.

Analysis of molecular epigenetic programming of diabetes mellitus

**Code:** CL/UAE/13/01 **Dates:** 2013–2015 **Value:** OR 20,000 **Funder:** SQU-UAE Collaborative Fund

**Investigators:** Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU; Dr. Khalid Al-Balushi, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Starling Emerald, Dept. Anatomy, UAE University, Al Ain, UAE.

Identification of novel therapeutic targets for inflammatory-associated human disorders

**Code:** SR/MED/BIOC /14/01 **Dates:** 2013–2015 **Value:** OR 75,100 **Funder:** His Majesty's Strategic Research Fund

**Investigators:** Dr. Yahya Al-Tamimi, Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU; Prof. Mansour Al-Mandhari, Dr. Ikram Burney, Dept. Medicine, SQU; Dr. Roseline Godbout, Experimental Oncology University, Alberta, Canada; Dr. Ritu Lakhtakia, Dept. Pathology, SQU; Dr. Moza Al-Kalbani, Dept. Obstetrics & Gynaecology, SQU; Dr. Sulaiman Al-Hashmi, Dept. Genetics, SQU; Dr. Mohammed R. Boulssel, Dept. Haematology, SQU.

Theileria in Oman: Molecular epidemiology and disease

**Code:** RC/MED/BIOC/13/01 **Dates:** 2013–2016 **Value:** OR 193,200 **Funder:** The Research Council Oman

**Investigator:** Dr. Hamza Babiker, Dept. Biochemistry, SQU.

Validity of different prostate specific markers (total prostate-specific antigen [PSA], free PSA and -2 pro PSA) in the diagnosis of prostate cancer

**Code:** RC/MED/BIOC/14/01 **Dates:** 2014–2015 **Value:** OR 13,960 **Funder:** The Research Council Oman

**Investigator:** Prof. Riad Bayoumi, Dept. Biochemistry, 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

**Investigator:** 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

**Figure 1:** Diagnostic services 2006–2014.
Investigator: Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU.

Evaluation of malaria loop-mediated isothermal amplification (LAMP) assay for malaria diagnosis in asymptomatic carriers in Oman

Funder: The Research Council Oman - Faculty Mentored Undergraduate Research Award Program

Investigator: Dr. Hamza Babiker, Dept. Biochemistry, SQU.

Identification and characterisation of novel pharmaco-logically active proteins from the venom 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 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 Notstedt, Karolinska Institutet, 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 Al-Tamimi, Dept. Biochemistry, SQU; Prof Mansour Al-Moundhri, Dept. Medicine, SQU.

Glycated haemoglobin and random blood glucose levels as predictors of oxidative stress in Omani healthy and diabetic adults

Investigator: Dr. Jumana Saleh, Dept. Biochemistry, SQU.

Effect of haemolysis on cardiac troponin levels in plasma at clinically relevant concentrations

Investigator: Dr. Nafila Al-Riyami, Dept. Biochemistry, SQU.

Validity of different prostate specific markers (total prostate-specific antigen [PSA], free PSA and -2 pro PSA) in the diagnosis of prostate cancer

Investigator: Prof. Riad Bayoumi, Dept. Biochemistry, SQU.

In vitro anti-cancer activity of selected medicinal plants from Oman

Investigator: Dr. Yahya Al-Tamimi, Dept. Biochemistry, SQU.

The genetics of cardiometabolic disorders among Arabs from the Oman Family Study

Investigators: Prof. Riad Bayoumi, Dept. Biochemistry, SQU; Dr. Said Al-Yahyaee, Dept. Genetics, SQU.

Abdominal body fat distribution as a determinant of serum cardiovascular risk markers in Omani women: Exploring the link to fat storage hormone levels

Investigator: Dr. Jumana Saleh, Dept. Biochemistry, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


**CONFERENCE & SEMINAR PRESENTATIONS**

**Conference Presentations**

**International**


2. Saleh J, Maqiali M, Al-Amri L, Wali M. Gamma-glutamyl transferase activity is markedly increased in healthy young adults with family history of metabolic disease and moderate increase in waist circumference. 2nd World Congress of Clinical Lipidology, Vienna, Austria, 5–7 Dec 2014.


**National**


**THESIS SUPERVISION**

**Student Name:** Sawsan Al-Sinani  
**Qualification:** Ph.D.  
**Title:** The clinical and genetic characterization of type 2 diabetes mellitus in Omanis  
**Supervisor:** Prof. Riad Bayoumi  
**Date of completion:** Jan 2014

**Student Name:** Afraa Al-Abri  
**Qualification:** M.Sc.  
**Title:** Mutation of cell adhesion gene FAT4 in gastric adenocarcinoma  
**Supervisor:** Dr. Yahya Al-Tamimi  
**Date of completion:** Feb 2014

**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

**Student Name:** Amani Ahmed  
**Qualification:** Ph.D.  
**Title:** Genetic mapping of drug-resistant *Plasmodium falciparum* in Sudan  
**Supervisor:** Dr. Hamza Babiker  
**Date of completion:** On-going

**Student Name:** Najma Al-Kharusi  
**Qualification:** Ph.D.  
**Title:** Genetic susceptibility to cardiovascular disease (CVD) and related metabolic disorders  
**Supervisor:** Prof. Riad Bayoumi  
**Date of completion:** On-going

**Student Name:** Ibtisam Al-Lawatia  
**Qualification:** Ph.D.  
**Title:** Sleep deprivation and association with metabolic syndrome  
**Supervisors:** Dr. Mohammed Al-Abri and Dr. Fahad Al-Zadjali  
**Date of completion:** On-going

**Student Name:** Amira Al-Kharusi  
**Qualification:** Ph.D.  
**Title:** Mechanisms in control of prolactin and growth hormone sensitivity  
**Supervisors:** Prof. Gunnar Norstedt and Dr. Fahad Al-Zadjali  
**Date of completion:** On-going

**Student Name:** Amna Al-Araimi  
**Qualification:** Ph.D.  
**Title:** Molecular study of inflammatory processes and role of growth hormone  
**Supervisor:** Dr. Fahad Al-Zadjali  
**Date of completion:** On-going

**Student Name:** Salama Hamidh  
**Qualification:** Ph.D.  
**Title:** Population genetic structure of *Theileria annulata* and *T. lestoquardi* in Oman  
**Supervisor:** Dr. Hamza Babiker  
**Date of completion:** On-going

**Student Name:** Raja Al-Sidairi  
**Qualification:** M.Sc.  
**Title:** The PNPLA3 I148M mutation and risk of developing non-alcoholic fatty liver disease  
**Supervisor:** Dr. Fahad Al-Zadjali  
**Date of completion:** Jun 2014
<table>
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<tr>
<th>Student Name</th>
<th>Qualification</th>
<th>Title</th>
<th>Supervisor</th>
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<tr>
<td>Abeer Al-Zubaidi</td>
<td>M.Sc.</td>
<td>Genetic structure and transmission pattern of <em>Mycobacterium tuberculosis</em> in Oman</td>
<td>Dr. Hamza Babiker</td>
<td>Sep 2014</td>
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<td>Maryam Al-Rashdi</td>
<td>M.Sc.</td>
<td>The analysis of <em>SCN5A</em> as a candidate gene for heart pacemaker control in Oman Family Study</td>
<td>Dr. Marit Delghandi</td>
<td>Sep 2014</td>
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<td>Buthaina Al-Dahli</td>
<td>M.Sc.</td>
<td>Apoptosis induction in MCF-7 cell line by marine coral extracts</td>
<td>Dr. Yahya Al-Tamimi</td>
<td>Oct 2014</td>
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<td>Laila Al-Amri</td>
<td>M.Sc.</td>
<td>Glycated haemoglobin and random blood glucose levels as predictors of oxidative stress in Omani healthy and diabetic adults</td>
<td>Dr. Jumana Saleh</td>
<td>Dec 2014</td>
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<td>Ishraq Al-Kindi</td>
<td>M.Sc.</td>
<td>Gum arabic use in the management of ulcerative colitis</td>
<td>Dr. Fahad Al-Zadjali</td>
<td>On-going</td>
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<tr>
<td>Sara Al-Mahrouqi</td>
<td>M.Sc.</td>
<td>Molecular epidemiology and characterization of drug-resistant <em>Mycobacterium tuberculosis</em> complex in Oman</td>
<td>Dr. Hamza Babiker</td>
<td>On-going</td>
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<td>Amira Al-Fahdi</td>
<td>M.Sc.</td>
<td>Phylogenetic analysis of <em>Theileria lestoquardi</em> in Oman</td>
<td>Dr. Hamza Babiker</td>
<td>On-going</td>
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<tr>
<td>Naeema Al-Yarabi</td>
<td>M.Sc.</td>
<td>Autozygosity mapping of uncharacterised autosomal recessive genetic conditions in Omani families</td>
<td>Dr. Yahya Al-Tamimi</td>
<td>On-going</td>
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The Department of Child Health is one of the pioneer departments in the College of Medicine & Health Sciences (COM&HS) 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 COM&HS 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.

With a highly integrated postgraduate training programme, the Department is equipped with excellent Clinical Teaching Units (CTUs) run by experienced medical doctors as lecturers. Our Department started the first CTU in Oman and has been complimented on the initiative by a number of international medical educationists and accreditation agencies. Various other departments have followed our example. The Department teaches and trains junior doctors, preparing them for various examinations affiliated to the Royal College of Paediatrics and Child Health (UK), Royal College of Physicians and 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 and 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 of patients and this is well supported by the Developmental Behaviour Clinic, introduced and established by Dr. Watfa Al-Mamari. Cardiology services have expanded over the last year and the Department is exploring the possibility of introducing 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. The Multidisciplinary Haemophilia Comprehensive Care Clinic and the Haemostasis Clinic have been running for the last two years. The paediatric dermatology clinical service was also initiated this year under the leadership of Dr. Buthaina Al-Muslahi, who recently obtained her subspecialty qualifications from Canada.

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. Moreover, the Department has successfully recruited five grants (for a total of more than OR 100,000) for five clinical trials taking place simultaneously.

In conclusion, the Department strives to achieve excellence in the region in undergraduate and postgraduate education, research and patient-centred 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 begin the development of 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, Associate 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. Elnoun, Senior Consultant
Salem Al-Tamemi, Senior Consultant
Roshan L. Koul, Senior Consultant
Siham Al-Sinani, Senior Consultant
Reem Abdwani, Senior Consultant
Matthew Zachariah, Senior Consultant
Abdulhakim Al-Rawas, Senior Consultant
Khalfan Al-Senadi, Senior Consultant
Mohamed Abdellatif, Senior Consultant
Hashim Javad, Senior Consultant
Anas Al-Wogud, Consultant
Syed R. Haider, Consultant
Watfa Al-Mamari, Consultant
Asad U. Rahman, Consultant
Mohamed Elshinawy, Consultant
Dana Al-Nabhani, Consultant
Wafa Bashir, Senior Specialist
Azza Al-Shadhan, Senior Specialist
Irfan Ullah, Senior Specialist
Masood Ahmed, Senior Specialist
Mathew Kripail, Senior Specialist
Zenaida Reyes, Senior Specialist
Surekha Tony, Senior Specialist
Ismail Elbeshlawi, Senior Specialist
Mohammed A. El-Naggari, Senior Specialist
Mohammed Fazalullah, Senior Specialist
Hanafy Fawzy, Senior Specialist
Akram Zakria, Senior Specialist
Renjit Mani, Senior Specialist
Aamir Qais, Senior Specialist
Naga R. Dhando, Senior Specialist
Buthainah Al-Muslahi, Senior Specialist
Eiman Abdalla, Specialist
Maria F. Bataclan, Specialist
Cheryl Monterminay, Specialist
Rana Abeerahim, Specialist
Shafiq U. Reham, Specialist
Fatma E. Amer, Specialist
Marwa Fawzy, Specialist
Aldai M. Ahmed, Specialist
Mazen A. M. Abuana, Specialist-A
Sharef W. Sharef, Specialist-A
Florence Birru, Specialist-A
Anwar Al-Omairi, Specialist-A
Yusriya Al-Rawahi, Specialist (on study leave)
Laila Al-Yazidi, Specialist (on study leave)
Raghad Abdwani, Specialist (on study leave)
Ashfaq Khan, Senior Medical Officer
Ashraf A. Saad, Senior Medical Officer
Ahmed B. Idris, Senior Medical Officer
Hilal N. B. Al-Riyami, Senior Medical Officer (on study leave)
Mohammed Al-Nuaimi, Senior Medical Officer (on study leave)
Hatem M. M. Al-Rawahi, Senior Medical Officer (on study leave)
Anwar H. Al-Omairi, Senior Medical Officer (on study leave)
Fatma J. M. Al-Amrani, Senior Medical Officer (on study leave)

Support Staff
Aisha Al-Maskarya, Coordinator (College)
Mirfat Al-Kharusi, Coordinator (Hospital)
Jolina Balasta-Pogoy, Coordinator (Hospital)
Aisha Al-Rawahi, Social Worker
Fatma Al-Farsi, Play Therapist
Amna Al-Alawi, Play Therapist
Kawther Al-Khusaihi, Play Therapist
Fathiya Al-Huseini, Play Therapist
Highlights of the Year 2014

SCHOLARLY AND ACADEMIC ACTIVITIES

From the 6–8 November 2014, the Oman Neurology Society in collaboration with SQUH, under the leadership of Dr. Abdullah Al-Asmi, Dr. Amna Al-Futaisi and various teams of doctors, organised the 9th Gulf Cooperation Council (GCC) Neurology Conference held at the Conference Hall of SQU. It was a successful three-day event which attracted a number of international speakers and attendees in the field of neurology and related areas of the neurosciences.

A symposium of the VII international network of clinicians for endocrinopathies in thalassemia and adolescent medicine was held on 20 December 2014 under the leadership of Prof. Yasser Wali and Prof. Vincenzo de Sanctis from Italy. These prestigious individuals pioneered and established a team of doctors from GCC countries specialised in the field of endocrinology. The symposium took place at the Al-Faham Hall of SQU.

Throughout 2014, Prof. Yasser Wali and Dr. Muna Al-Saadoon served on the Editorial Board of the SQUMedical Journal. Prof. Yasser Wali, Dr. Abdulkhaim Al-Rawas, Dr. Amna Al-Futaisi, Dr. Reem Abdwani and Dr. Saif Al-Yaarubi served in this period on the Editorial Board of the Oman Medical Journal. Both of these journals are indexed in Scopus with full text articles available in PubMed.

NATIONAL AND REGIONAL COMMITTEES

The Department members continuously contributed to various external and internal committees including: Prof. Yasser Wali, Executive Board member of the Oman Medical Specialty Board (OMSB); Dr. Hashim Javad, Chairman of the Quality Development Committee dealing with the Accreditation Canada International process, a continuous commitment to assure the quality improvement of SQUH, together with his Deputy, Dr. Sharaf Sharaf; 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. Abdulkhaim 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. Ibtesam El-Nour, technical expert and member of the HMC for nephrology cases; Dr. Mohammed Abdellatif, technical expert and member of the HMC for neonatology cases; Dr. Amna Al-Futaisi and Dr. Roshan Koul, technical experts and members of the HMC for neurology cases; Dr. Roshan Koul, member of the National Polio Surveillance Committee; Prof. Zakiya Al-Lamki, member of the Research & Ethical Review Committee, Ministry of Health; and Dr. Muna Al-Saadoon, member of the national Bioethics, Maternal, Early School Improvement Task Force and Child Health committees.

COMMUNITY SERVICE

We take great pride in continuing to serve the community and raising funds to serve children with all kinds of special needs in various ways. The school health education programme has been an innovative initiative of the Department, addressing issues of healthy lifestyles, alcohol and drug abuse and childhood obesity among children studying in various schools. We provide consultant services to many institutions in the Gulf area and India as well as to local hospitals in Oman for haematology cases. We offer parent counselling and education for home ventilation. The Department participates in medical missions with the Embassy of the Philippines for neonatal clinical services and takes part in radio and television campaigns to raise awareness about paediatric haematology/oncology diseases, autism, asthma and immunological diseases. The Department is also involved in awareness campaigns about genetic blood disorders and juvenile diabetes. In addition, 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 PROGRAMMES

Preclinical Programme

The Department is actively involved in undergraduate and postgraduate teaching.

Clinical Programme

Phase III of the new curriculum has been successfully implemented. Currently, the preclerkship, junior clerkship and senior clerkship programmes are running smoothly. The first batch of pre-internship students started the academic year successfully. The Department also participates in Integrated Modules II and III which takes around 50 students every spring and fall semester.

POSTGRADUATE PROGRAMME

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 10–20 paediatric interns per group, rotating on a quarterly basis under the care and coordination of Dr. Dana Al-Nabhani. At any time of the year, the Department will have 3–4 OMSB paediatric 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 member of staff is invited yearly to deliver a clinical presentation to the Emergency Medicine Department residents.

Senior Department members contributed to postgraduate research programmes outside of the Department and acted as supervisors and judges on Research Day.

The Department conducts successful yearly examinations leading to membership of the Royal College of Paediatric & Child Health (MRCPCH).

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

Clinical & Diagnostic Services
The Department offers procedures and tests in the following fields: neurology (electroencephalography [EEG], 24-hour EEG video and electromyography as well as nerve conduction velocity, brainstem auditory-evoked response, somatosensory-evoked potential and visual-evoked potential tests); gastroenterology (endoscopy and colonoscopy); pulmonology (bronchoscopy and sleep studies), immunology (skin tests); nephrology (peritoneal dialysis); and haematology (exchange transfusion, plasmapheresis, portacath access, bone marrow aspiration and biopsy and intrathecal chemotherapy).

The Department also provides services to the Emergency Medicine Department. In 2014, approximately 12,455 paediatric patients were seen and consulted by the Paediatric On-Call Team.

The Outpatient Paediatric Clinic is open all working days of the week.

Research

RESEARCH PROJECTS
Genetics of systemic lupus erythematosus

Investigator: Dr. Reem Al-Abdawani, 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

Code: IG/MED/CHLD/14/01 Dates: 2014–2015 Value: OR 6,000 Funder: SQU
Investigators: Prof. Yasser Wali, Dr. Khalfan S. Al-Senadi, Dr. Wafa Bashir, Dept. Child Health, SQU.

Key aspects of medical practice in patients with haemophilia A (KAPPA)

Code: EG/MED/CHLD/14/01 Dates: 2014–2015 Value: OR 5,000 Funder: SQU
Investigators: Prof. Yasser Wali, Dr. Abdulhakim Al-Rawas, Dr. Hanan Fawzy, Dr. Ismail Elbeshlawi, Dept. Child Health, SQU; Dr. Murtadha Al-Kabhori, Dr. Salam Alkindi, Dr. Anil Puthare, Dept. Haematology, SQU.

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

Investigators: Prof. Yasser Wali, Dr. Hanan Fawzy, Dr. Mohamed Elshinawy, Dept. Child Health, SQU; Dr. Murtadha Al-Kabhori, Dr. Salam Alkindi, Dr. Arwa Al-Riyami, Dept. Haematology, SQU; Ms. Shereen Al-Zadjali, Dept. Pharmacy, SQU.

A multi-country epidemiology study to identify predictors associated with RSV hospitalization in non-prophylaxed premature infants born between 33 weeks and 0 days and 35 weeks and 6 days of gestation

Investigator: Dr. Reem Al-Abdawani, Dept. Child Health, SQU.

An open-label study to evaluate prophylaxis, treatment and to characterise the efficacy, safety and pharmacokinetics of B-domain deleted recombinant factor VIII albumin free in children with haemophilia

Investigators: Prof. Yasser Wali, Dr. Hanan Fawzy, Dr. Mohamed Elshinawy, Dr. Abdulhakim Al-Rawas, Dr. Ismail Elbeshlawi, Dept. Child Health, SQU; Ms. Sherleen Al-Zadjali, Ms. Tufool Al-Zadjali, Dept. Pharmacy, SQU.
### Table 1: Weekly schedule for the Paediatric Outpatient Department in 2014

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haematology</td>
<td>Cardiology</td>
<td>Nephrology</td>
<td>Neurology</td>
<td>Neonatal</td>
</tr>
<tr>
<td>Neonatal</td>
<td>Neurology</td>
<td>Child protection</td>
<td>Developmental behaviour</td>
<td>Developmental behaviour</td>
</tr>
<tr>
<td>Surgery</td>
<td>Immunology</td>
<td>Genetic paediatric</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 (every first and third week)</td>
<td>Neonatal</td>
<td>Genetic paediatric</td>
<td></td>
</tr>
<tr>
<td>Genetics (every third week)</td>
<td>Bone marrow transplantation</td>
<td>Surgery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Inpatient statistics in 2014

<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>2014</td>
<td>5,483</td>
<td>69%</td>
<td>3.68</td>
</tr>
</tbody>
</table>

### Table 3: Neonatal Intensive Care Unit in 2014

<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>2014</td>
<td>531</td>
<td>89%</td>
<td>14.8</td>
</tr>
</tbody>
</table>

### Table 4: Intensive Care Unit in 2014

<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>2014</td>
<td>257</td>
<td>51.4%</td>
<td>5.9</td>
</tr>
</tbody>
</table>

### Table 5: Paediatric Day Care Unit in 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Admissions</th>
<th>Discharges</th>
<th>Average length of stay in hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>4,397</td>
<td>4,397</td>
<td>6–7</td>
</tr>
</tbody>
</table>

### Table 6: Outpatient statistics in 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Booked</th>
<th>Seen</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>13,700</td>
<td>14,783</td>
<td>266</td>
<td>4,750</td>
</tr>
</tbody>
</table>

### Table 7: Child Health Developmental & Autism Clinic in 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Booked</th>
<th>Seen</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>4,977</td>
<td>704</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Table 8: Bone Marrow Transplant Clinic in 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Booked</th>
<th>Seen</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>1,164</td>
<td>799</td>
<td>54</td>
<td>0</td>
</tr>
</tbody>
</table>
PPONI study: A multi-country epidemiology study to identify predictors associated with RSV hospitalisation in non-prophylaxed premature infants born between 33 weeks and 0 days and 33 weeks and 6 days of gestation

Project Approval: SQU
Investigator: Dr. Hussein Al-Kindi, Dept. Child Health, SQU.

Impact of burden of thalassaemia major on quality of life of parents and children

Project Approval: SQU
Investigator: Dr. Surekha Tony, Dept. Child Health, SQU.

Outcome of neonates born to systemic lupus erythematosus (SLE) mothers

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

Pattern of paediatric poisoning in a tertiary hospital in Oman: Two-year retrospective study

Project Approval: SQU
Investigator: Dr. Hashim Javad, Dept. Child Health, SQU.

A observational multi-centre study to evaluate the safety of deferasirox in the treatment of pediatric patients with non-transfusion-dependent iron overload

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

Changing survival rate of infants born before 26 weeks of gestation: A single centre study

Project Approval: SQU
Investigator: Dr. Asad Rahman, Dept. Child Health, SQU.

Myelopathy in children

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

Acute splenic sequestration crises in Omani children with sickle cell disease in relation to HB S haplogenotype

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

Impact of a false-positive blood culture result on the management of febrile children in Oman

Project Approval: SQU
Investigator: Dr. Mohammed El-Naggari, Dept. Child Health, SQU.

Infantile colic among Omani children: Hospital cohort study

Project Approval: SQU
Investigator: Dr. Muna Al-Saadoon, Dept. Child Health, SQU.

Parents’ knowledge, attitude and practice on the use of car restraint system

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

Early detection of cardiac and hepatic iron overload by TS* magnetic resonance in very young patients with thalassaemia major in Oman

Project Approval: SQU
Investigator: Dr. Surekha Tony, Dept. Child Health, SQU.

Factors associated with accidental injuries among Omani children attending SQUH emergency room

Project Approval: SQU
Investigator: Dr. Muna Al-Saadoon, Dept. Child Health, SQU.

Juvenile dermatomyositis in Arab children: Clinical features and long-term outcome

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

Descriptive study of sickle cell disease risk factors and magnitude in the Gulf region based on TCD values

Project Approval: SQU
Investigator: Prof. Yasser Wali, Dept. Child Health, SQU.
RESEARCH PUBLICATIONS & BOOKS

Journal Publications


BOOKS & BOOK CHAPTERS


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

International


Annual Report 2014

National


**Poster Presentations**

International

2. **Abdelmogheith AA, Al-Nair AM, Balkhair AA, Mahmoud AM, El-Naggari M.** Pattern of viral infections among infants and children admitted to the Paediatric Intensive Care Unit at Sultan Qaboos University Hospital, Oman. 32nd Annual Meeting of the European Society for Pediatric Infectious Diseases (ESPID 2014), Dublin, Ireland, 6–10 May 2014.

National
1. **Koul R.** Pyridoxine dependent seizures and pyridoxine responsive seizures in SQUH in the last 10 years. 9th GCC Neurology Conference, Sultan Qaboos University, Muscat, Oman, 6–8 Nov 2014.

**Seminar Presentations**

International


**Thesis Supervision**

Student Names: **Saleema A. Al-Masroori and Arwa S. Al-Jabri**

Qualification: M.Sc.

Title: Risk factors for late onset neonatal sepsis in infants hospitalized in the neonatal intensive care unit

Supervisor: Dr. Mohamed Abdellatif

Date of completion: On-going

Student Names: **Sausan S. M. Al-Khalasi and Shaima A. S. Al-Sidairi**

Qualification: M.Sc.

Title: Incidence, clinical course and outcomes of hypoxic encephalopathy in NICU SQUH

Supervisor: Dr. Asad U. Rahman

Date of completion: On-going

Student Names: **Asaad A. S. Al-Habsi and Ahmed S. M. Al-Majrafi**

Qualification: M.Sc.

Title: Impact of thalassaemia on children's quality of life

Supervisor: Dr. Muna Al-Saadoon

Date of completion: On-going

Student Names: **Salha A. A. Al-Saadi and Azhar M. A. Al-Shukri**

Qualification: M.Sc.

Title: The impact of asthma on the attendance of school children (6–15 years)

Supervisor: Dr. Muna Al-Saadoon

Date of completion: On-going

Student Name: **Balqees H. A. Al-Sadi**

Qualification: M.Sc.

Title: Mother’s expectations of NICU physicians and nurses while their premature infant is admitted in NICU: A single centre qualitative study

Supervisor: Dr. Asad Rahman

Date of completion: On-going

Student Names: **Wafa Al-Shaqri and Fatema Al-Saidi**

Qualification: M.Sc.

Title: Descriptive study of sickle cell disease risk factors and magnitude in the Gulf region based on TCD values

Supervisor: Prof. Yasser Wali

Date of completion: On-going
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, with its own helipad used by different national agencies in the event of a disaster or in other emergency situations. We treat approximately 65,000 patients annually and receive patients from each and every corner of the country. Acting as the first point of entry for the majority of the patients visiting the Sultan Qaboos University Hospital (SQUH) and serving as the main hub for patients admitted into various other 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 improvements are made to keep pace with the ever increasing number of patients.

Most 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 immediately transferred 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, both conventional and non-invasive, sonographic machines and an arterial blood gas machine.

In order to fulfil 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.
Annual Report 2014

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 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

Head of the Department
Nabil Al-Zadjali, Senior Consultant

Hospital Staff
Abdullah Al-Reesi, Senior Consultant
Khalfan Al-Amrani, Consultant
Marwan Al-Raisi, Consultant (Paediatric)
Hilal Al-Barwani, Consultant (Paediatric)
Jabeen Fayyaz, Senior 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
Niranjan Lal, Registrar (Paediatric)
Sumaira Iram, Registrar (Paediatric)
Ashraf Ali, Registrar
Mohammed F. Khilji, Registrar
Mohammed O. Mubashir, Registrar
Rafael Hashmi, Registrar
Umam Shahzad, Registrar
Qazi Ziaulhaq, Registrar
Vinod Abraham, Senior House Officer
Mohammed Awais, Senior House Officer
Nowfali Sabri, Senior House Officer
Mohammad S. Khan, Senior House Officer
Bader Al-Amri, Senior House Officer
Quratulain Shafiq, Senior House Officer
Kholoud Mahmoud, Senior House Officer
Rubina Siddiqui, Senior House Officer
Hajar Al-Hoqani, Senior House Officer
Khadijatul Muneer, Senior House Officer
Mohammed R. Kabin, Senior House Officer
Aisha Al-Khamisi, Senior House Officer (training abroad)
Suad Al-Abri, Senior Registrar (training abroad)
Amal Al-Mandhari, Senior House Officer (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
Afra Al-Abri, Coordinator
Abdullah Al-Rawahi, Clinical Area Coordinator
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 2014

NEW STAFF

In 2014, the following new staff joined the Department: Dr. Jabeen Fayyaz (Senior Registrar, Paediatrics); Dr. Sumaira Iram (Registrar, Paediatrics); Dr. Rubina Siddiqui (Senior House Officer); Dr. Hajar Al Hoqani (Senior House Officer); Dr. Khadijatul Muneer (Senior House Officer); and Ms. Afrah Al-Abri (Coordinator).

EXPANSION OF THE EMERGENCY DEPARTMENT

Civil work on the Department expansion has been started to meet the demands of a growing number of patients.

RAPID ASSESSMENT TRIAGE SYSTEM

To address the issue of overcrowding, a rapid assessment triage (RAT) system has been established. RAT is a focused assessment of patients admitted within a certain timeframe by utilising a triage/team approach. In this system, two teams work on triage with each team comprised of a nurse and a doctor who assess the patient simultaneously and categorise them as per the Canadian Triage Assessment System categories. By implementing this RAT system, a door-to-doctor time decrease of less than 10 minutes is expected, with an overall decrease of more than 90 minutes in door-to-discharge time per patient.

COMMITTEES

The majority of departmental staff are members of committees with several existing committees being reactivated and reorganised in 2014 and new committees formed. The heads of all committees report directly to the Head of Department. Every committee is given time-oriented tasks and all members are expected to deliver according to these tasks. These committees are in the process of identifying annual and long-term goals.

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.

EMERGENCY MEDICINE INTERNATIONAL DAY
The Department celebrated the Emergency Medicine International Day in October 2014. A stand was prepared to deliver a case presentation to visitors on non-invasive ventilation.

PROFESSIONAL EXAMINATIONS
Many of our doctors presented themselves for international professional examinations. In 2014, one of our doctors gained Membership of the Royal Colleges of Physicians UK. Different parts of the membership examinations of the College of Emergency Medicine, UK, were passed by many of our staff. Most of the doctors updated their Advanced Cardiac Life Support (ACLS), Paediatric Life Support (PALS) 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 2014, we also said goodbye to Dr. Mohammed R. Kabir, Senior House Officer.

Teaching Programmes

UNDERGRADUATE PROGRAMME

Old Curriculum
The Department actively participates in the training and teaching of 6th year medical students in the old curriculum. We received eight batches of students on a monthly rotation from August to May. Each batch was divided into four 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. Individual student 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.

POSTGRADUATE PROGRAMMES

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

Residence Programme
Residents participating in the OMSB Emergency Medicine, Family & Community Medicine and Surgery programmes rotated through the Department at various stages of their training. They were 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 were given the chance to exercise and improve recently learned skills such as suturing and other simple procedures; they were also taught new skills like intubation, central line placement, basic bedside ultrasound, etc. Senior residents were allowed to handle more critical patients in the bay area under the supervision of the doctor in charge of the shift. Apart from clinical activities, academic activities of a minimum of four hours per week were mandatory. These activities included case or topic presentations, journal clubs and workshops.

CLINICAL ELECTIVES AND 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 2014, 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. This course is now gaining popularity and was attended by more than 50 participants from different hospitals, including both the Khoul and 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 Basic Life Support (BLS), ACLS and PALS courses. All these courses are now American Hospital Association-certified.

The Department's popular in-house CME activities are now held weekly instead of fortnightly, and include...
interesting presentations, journal club, quizzes, etc. Sometimes the hands-on practice of different skills is also provided during CME activities in order to refresh the skills of the staff.

Clinical & Diagnostic Services

In 2014, the Department received 63,975 patients compared to 62,525 in 2013. The details of these patients are shown in the table and figures below.

Table 1: Emergency Medicine Department statistics in 2014

<table>
<thead>
<tr>
<th>Category</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>B</td>
<td>25</td>
<td>22</td>
<td>26</td>
<td>28</td>
<td>22</td>
<td>9</td>
<td>13</td>
<td>22</td>
<td>27</td>
<td>18</td>
<td>16</td>
<td>20</td>
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* 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; Bl = black category patients; NTC = not categorised; SSU = short stay unit; DEF = deferred cases; LWBS = left without being seen; ADM = admission cases; DOA = dead on arrival; DAA = died after arrival; SCD = sickle cell disease cases; RTA = road traffic accident cases; EMP = University or hospital employee; DEP = dependent; STD = student; CPR = cardiopulmonary resuscitation; DAMA = discharged against medical advice; LABS = left after being seen without informing the medical staff; OTRA = other trauma.

Figure 1: Total number of patients seen in 2014.
Figure 2: Distribution of patients in 2014 by category of severity.

Figure 3: Distribution of patients in 2014 by category of stay/admission or condition. 
SSU = short stay unit; DEF = deferred cases; LWBS = left without being seen; ADM = admission cases; DOA = dead on arrival; DAA = died after arrival; SCD = sickle cell disease cases; RTA = road traffic accident cases.

Figure 4: Distribution of patients in 2014 by age category.
Research

RESEARCH PROJECTS

The factors associated with hospital cardiac arrest

Project Approval: SQU

Investigator: Dr. Abdullah Al-Reesi, Dept. Emergency Medicine, SQU.

Transcutaneous bilirubin measurement as alternative diagnostic tool to total serum bilirubin level in an Omani population

Project Approval: SQU

Investigator: Dr. Amal Al-Shibli, Dept. Emergency Medicine, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publication

Established in 1986, the Department of Family Medicine & Public Health is one of the major clinical departments in the College of Medicine & Health Sciences (COM&HS) 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 Master’s 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-Shafae, Associate Professor (to 30 Jun 2014)  
Abdulaziz Al-Mahrezi, Senior Consultant (from 1 Jul 2014)

**Faculty**
Shyam S. Ganguly, Professor  
Yahya Al-Farsi, Associate Professor, Assistant Dean (Training & Community Service)  
Mohammed Al-Azri, Associate Professor

Syed Rizvi, Assistant Professor  
Ahmed Al-Mandhari, Senior Consultant  
Ahmed Al-Wally, Senior Consultant, Dermatologist  
Zakiya Al-Busaidi, Senior Consultant  
Hamdan Al-Habsi, Senior Consultant  
Mustafa Al-Hinai, Consultant  
Robin Davidson, Consultant  
Kawther El-Shafie, Consultant  
Ana M. Anido, Senior Registrar, Dermatologist  
Nafisa Samir, Senior Registrar
Chander Kumar, Registrar
Laila A. Ramadhan, Registrar
Aisha Al-Hinai, Registrar
Vrunda Pimpalkhute, Registrar
Aida Al-Khalili, Registrar
Imran S. Azmi, Registrar
Teodorico Diputado, Registrar
Hanaa Al-Sumri, Senior House Officer
Maha Al-Jabri, Senior House Officer
Wahida Al-Maskeri, Senior Chief Dietician

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

Highlights of the Year 2014

During the year 2014, Dr. Abdulaziz Al-Mahrezi was appointed as Head of Department, Prof. Shyam S. Ganguly was promoted to Professor, Dr. Yahya Al-Farsi was promoted to Associate Professor and Dr. Mohammed Al-Azri was transferred from SQUH to the College and became Associate Professor. The Department recruited Dr. Robin Davidson as a consultant.

The research output for 2014 consisted of 13 research projects, 10 international poster presentations and 29 publications in peer-reviewed journals. Staff members actively participated in several national and international conferences. The Department also served in several committees in SQU, SQUH, COM&HS, Ministry of Health (MOH) and Oman Medical Specialty Board (OMSB).

Teaching Programmes

UNDERGRADUATE PROGRAMMES

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

M.D. CURRICULUM

The Department is involved in teaching Phase II and Phase III of the curriculum. In addition, the Department is involved in teaching students from the Intercalated Phase.

Preclerkship Programme

The Department participated in the Preclerkship programme for the third time in 2014 by conducting 10 general assessment weeks and also participated in the final examination. The objectives of the general assessment week were updated. The clinical teaching is done in staff and student clinics plus the skills laboratory. 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 five-week clinical rotation in the SQU Health Centre and in five of the accredited 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 further explores 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: vaccinations; antenatal care; integrated management of childhood illnesses; school and community health, etc.

Senior Clerkship Programme

The senior clerkship students have a three-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 Family Medicine & Community Health Centre or in one of the nearby MOH clinics. The students learn how to deal with undifferentiated health problems presented to the family doctor as well as how to manage chronic illnesses among members of the community. During the rotation, students have various assessments in the form of a mini-clinical evaluation exercise, 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 PROGRAMMES

Family Medicine Residency training programme
The Department is actively involved in teaching, training and conducting various examinations for the family medi-
cine residents who are enrolled in the Family Medicine Residency programme under the auspices of the OMSB. There were 77 residents in the programme in 2014 at various levels of training. Senior residents, during their final year of training, receive the bulk of their training in the University Health Centre. The exit examination, MRCGP-INT, is accredited by the Royal College of General Practitioners, UK.

M.Sc. Programme

The Department played an active role in teaching the Master’s programme in Epidemiology & Medical Statistics. The following courses were conducted by the Epidemiology & Medical Statistics Unit: Statistics & Computers; Advanced Principles of Epidemiology; Advanced Statistical Methods; Categorical Data Analysis; Applied Epidemiology; Statistical Methods in Quality Control; and part of the Research Methodology & Critical Analysis of Scientific Information course. In addition, supervision of Master’s theses based on research projects were also carried out. During 2013 and 2014, the Department had three students in the Master’s degree programme.

Ph.D. Programme

The Department continued the Doctoral degree programme in Epidemiology & Public Health. During 2013 and 2014, four candidates were registered in the Ph.D. programme.

Training Courses & CME Activities

In 2014, the Department continued to arrange 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 regarding clinical knowledge and recent guidelines and protocols. Other topics were quality sessions and audit projects, 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 country to have received international accreditation as a “model health centre” by the Arab Board of Medical Specializations and by the Royal College of General Practitioners, UK, for clinical services and the teaching of family medicine. Our Health Centre is the leading star in primary healthcare (PHC) in Oman with regards to PHC ideology, quality, comprehensiveness of care and prevention.

Patient services are provided at the SQU Health Centre and the Student Clinic. A total of 39,828 patients were seen at the Health Centre in 2014. The Department has separate diabetes, counselling, antenatal and postnatal clinics besides the birth spacing and the MOH extended programme of immunisation for children and adults. The Dermatology Clinic receives referrals from various departments in SQUH and from all over the country for consultation and for performing various procedures including laser treatment. The Student Clinic serves SQU students for all of their PHC needs. It offers the following clinics: General Appointments; Walk-in; and Smoking Cessation.

Research

RESEARCH PROJECTS

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

<table>
<thead>
<tr>
<th>Code: SR/CCE/OMBS/12/01</th>
<th>Dates: 2012–2015</th>
<th>Value: OR 58,000</th>
<th>Funder: His Majesty's Strategic Research Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigators: Dr. S. Al-Balushi, Dr. A. Al-Hajri, Dept. Operations Management &amp; Business Statistics, SQU; Dr. P. Sohal, Dept. Management, University of Monash, Melbourne, Australia; Dr. A. Kumar, University of Melbourne, Melbourne, Australia; Dr. Yahya Al-Farsi, Dept. Family Medicine &amp; Public Health, SQU.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dietary and lifestyle risk factors in the etiology of colorectal and stomach cancers in Oman

<table>
<thead>
<tr>
<th>Code: IG/AGR/FOOD/14/02</th>
<th>Dates: 2014</th>
<th>Value: USD</th>
</tr>
</thead>
</table>
Evaluation of risk factors for stroke in an Omani community

**Code:** IG/MED/FAMCO/13/01  **Dates:** 2013–2014  **Value:** OR 5,100  **Project Funder:** SQU

**Investigators:** Dr. Yahya Al-Farsi, Prof. Shyam Ganguly, Dept. Family Medicine & Public Health, SQU; Dr. Mostafa Waly, Dr. Amanat Ali, Dept. Food Science & Nutrition, College of Agricultural & Marine Sciences, SQU; Dr. Mansour Al-Moundhri, Dr. Ikram Burney, Dept. Medicine, SQU; Dr. Jawad Al-Lawati, MOH.

Public awareness of cancer among Omani population

**Code:** MREC #793  **Dates:** 2013–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigators:** Dr. Mohammed Al-Azri, Dept. Family Medicine & Public Health, SQU; Prof. Arunodaya R. Gujjar, Dr. Abdullah R. Al-Asmi, Dept. Medicine, SQU; Dr. Santosh Kumar, Dept. Neurology, Royal Hospital.

The prevalence and characteristics of erectile dysfunction among patients with diabetes

**Code:** MREC #850  **Dates:** 2013–2016  **Value:** Unfunded  **Project Approval:** SQU

**Investigators:** Dr. Abdulaziz Al-Mahrezi, Dept. Family Medicine & Public Health, SQU; Dr. Ali Al-Mammari, Dept. Medicine, SQU; Dr. Abdullah Al-Muniri, The Research Council Oman; Dr. Humood Al-Fazari, Dr. Idris Al-Juma, OMSB residents.

Thyroid dysfunction in Omani type 2 diabetics

**Code:** MREC #851  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Kawther El-Shafie, Dept. Family Medicine & Public Health, SQU.

Assessment of staff knowledge, attitude and practice with regards to the nine WHO patient safety solutions

**Code:** MREC #884  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Ahmed Al-Mandhari, Dept. Family Medicine & Public Health, SQU.

Assessment awareness about diagnosis and management of non-alcoholic fatty liver disease (NAFLD) among primary care physicians

**Code:** MREC #891  **Dates:** 2014–2015  **Value:** Unfunded

**Investigator:** Dr. Mustafa Al-Hinai, Dept. Family Medicine & Public Health, SQU.

**Assessment of nutritional status and eating problems in children with autism spectrum disorder in Oman: A case-control study**

**Code:** MREC #899  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Mustafa Al-Hinai, Dept. Family Medicine & Public Health, SQU.

**Assessment of staff knowledge, attitude and practice with regards to the nine WHO patient safety solutions**

**Code:** MREC #1007  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigators:** Dr. Mohammed Al-Azri, Dr. Robin Davidson, Dept. Family Medicine & Public Health, SQU; Ms. Laila M. Al-Manji, COM&HS student, SQU.

**Assessment awareness about diagnosis and management of non-alcoholic fatty liver disease (NAFLD) among primary care physicians**

**Code:** MREC #892  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Mustafa Al-Hinai, Dept. Family Medicine & Public Health, SQU.

**Assessment of nutritional status and eating problems in children with autism spectrum disorder in Oman: A case-control study**

**Code:** MREC #899  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Mustafa Al-Hinai, Dept. Family Medicine & Public Health, SQU.

**Knowledge and health beliefs about sickle cell disease among public in Sultanate of Oman**

**Code:** MREC #902  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigators:** Dr. Mohammed Al-Azri, Dr. Kawther El-Shafie, Dept. Family Medicine & Public Health, SQU; Dr. Muna Al-Mamari, Dr. Rajaa Al-Balushi, OMSB residents.

**The diagnostic value of magnetic resonance (MR) before and after the implementation of mandatory approval by a senior physician: Experience from FAMCO Clinic**

**Code:** MREC #944  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Ahmed Al-Mandhari, Dept. Family Medicine & Public Health, SQU.

**A qualitative study on the help-seeking behaviours among depressed SQU medical students**

**Code:** MREC #968  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Zakiya Al-Busaidi, Dept. Family Medicine & Public Health, SQU.

**Patients’ view of their involvements in consultation at primary care setting in Oman**

**Code:** MREC #1007  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigators:** Dr. Mohammed Al-Azri, Dr. Robin Davidson, Dept. Family Medicine & Public Health, SQU; Ms. Laila M. Al-Manji, COM&HS student, SQU.

**Research Publications & Books**

**Journal Publications**


2. Al-Azri M, Al-Rasbi K, Al-Hinai M, Davidson R, Al-Maniri A. Awareness of risk factors for cancer among...


27. Ganguly SS. Robust regression analysis for non-


BOOKS & BOOK CHAPTERS


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

International


National


Poster Presentations

International


7. Al-Sharbat M, Al-Saadoon M, **Al-Farsi YM**, Rizvi S, Al-Adawi S. Bullying, psychology and emotions among Omani adolescents in Muscat schools. 16th World Congress of Psychiatry, Madrid, Spain, 14–18 Sep 2014.


National


Seminar Presentations

International

1. **Al-Farsi YM**. The effectiveness of contingency management therapy for waterpipe smoking cessation. Workshop: Towards Interventions for Waterpipe Tobacco Smoking, American University of Beirut, Beirut, Lebanon, 11–13 May 2014.

National


5. **Al-Farsi YM**. Lean thinking and community service. First Workshop of Lean Thinking in Healthcare Systems, Sultan Qaboos University Hospital, Muscat, Oman, 10–11 Feb 2014.


**THESIS SUPERVISION**

**Student Name:** Maryam Al-Fazari

**Qualification:** M.Sc.

**Title:** Assessment of risk factors related to nutrition and dietary intake among Omani women with polycystic ovarian syndrome

**Supervisor:** Dr. Yahya Al-Farsi

**Date of completion:** Dec 2014

**Student Name:** Maha Suleiman

**Qualification:** Ph.D.

**Title:** Polycystic ovarian syndrome in Oman: Risk factors, clinical and biochemical profile and psychological impairment
Annual Report 2014

Supervisor: Dr. Yahya Al-Farsi
Date of completion: On-going

Student Name: Ibtisam Al-Lawati
Qualification: Ph.D.
Title: Sleep fragmentation and cardiometabolic abnormalities in Omani adults
Supervisor: Prof. Shyam S. Ganguly
Date of completion: On-going

Student Name: Kamila Al-Alawy
Qualification: Ph.D.
Title: Exploring the feasibility of interdisciplinary teams in the management of diabetes at primary health care level in Oman
Supervisor: Dr. Ahmed Al-Mandhari
Date of completion: On-going
Genetics is becoming an increasingly vital discipline to science, research, society and humanity as a whole. It is presently one of the fastest growing scientific fields known to mankind.

The mission of the Department of Genetics at Sultan Qaboos University (SQU) is to provide state-of-the-art services for patient care, education and research. The Department enjoys ample resources, providing scientists and clinicians with unprecedented opportunities to make a difference to science and society in relation to this field. The Department has therefore been actively involved in research, undergraduate and postgraduate medical education and training, as well as in the clinical care of patients with confirmed or suspected genetic disorders spanning different disciplines and extending beyond the boundaries of the Department into the larger community.

The Department has four specialised sections: Clinical Genetics; Cytogenetics; Molecular Genetics; and Human Leukocyte Antigen (HLA)/Immunogenetics. Research in the Department currently focuses on cancer genetics, nutrigenetics, inborn errors of metabolism, rare genetic diseases, cystic fibrosis and the application of genomic technologies.
Staff

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

**Faculty**
Said Al-Yahyae, Professor
Allal Ouhtit, Associate Professor
A. M. Udayakumar, Associate Professor

**Clinical Genetics**
Fathiya Al-Murshtedi, Senior Consultant
Adila Al-Kindy, Senior Consultant
Abeer Al-Sayegh, Senior Consultant
Zandre Bruwer, Genetic Counsellor
Maha Al-Awadi, Consultant
Sara S. Al-Alawi, Social Worker
Khalsa Al-Kharousi, Biomedical Scientist
Abeer Al-Sayegh, Senior Consultant
Zandre Bruwer, Genetic Counsellor
Maha Al-Awadi, Consultant
Sara S. Al-Alawi, Social Worker
Khalsa Al-Kharousi, Biomedical Scientist
Abeer Al-Sayegh, Senior Consultant
Zandre Bruwer, Genetic Counsellor
Maha Al-Awadi, Consultant
Sara S. Al-Alawi, Social Worker
Khalsa Al-Kharousi, Biomedical Scientist

**Molecular Genetics**
Patrick Scott, In charge of Molecular Laboratory
Rayhanh Al-Mjeni, Senior Biomedical Scientist
Mariam Al-Nabhani, Biomedical Scientist
Aisha Al-Naamani, Biomedical Scientist
Farida Al-Mamaari, Biomedical Scientist
Lina N. Mashadani, Biomedical Scientist
Feisal Al-Mahrizi, Biomedical Scientist
Samia Al-Rashdi, Biomedical Scientist
Sami Al-Kalbani, Biomedical Scientist

**Cytogenetics**
Halima Al-Shihi, Specialist A
Robert Sigmani, Biomedical Scientist
Shoma S. Raj, Biomedical Scientist
Balaji Krishnan, Biomedical Scientist
Sultan S. Al-Salhi, Biomedical Scientist

**Immunogenetics**
Hamad Al-Riyami, Chief Biomed. Scientist, Superintendent
Varghese C. M., Senior Biomedical Scientist
Faiza Al-Yahyai, Senior Biomedical Scientist
Suriyan Mani, Biomedical Scientist
Iman H. Al-Hadhili, Biomedical Scientist
Faiza Al-Ghanami, Biomedical Scientist
Suleiman Al-Hashmi, Associate Researcher

**Support Staff**
Ruqaya Al-Dughahishi, Coordinator (College)
Soad S. Al-Muqâîmi, Coordinator (Clinic)

Highlights of the Year 2014

One of the major activities organised by the Department in 2014 was the 2nd International Genetics Conference titled “Genetics in Developing Countries: Unique Challenges and Opportunities”. The conference was hosted at the Conference Hall at SQU. Contributions were received from both national and international speakers and the event attracted almost 200 delegates. Given the relevance of the conference to the Omani society, there was significant attention from the media, which also helped with regards to the dissemination of the messages intended to be highlighted by the conference.

During 2014, Dr. Halima Al-Shihi and Dr. Rayhanh Al-Mjeni returned to the Department after the successful completion of their Ph.D. programmes. The former joined the Cytogenetics Laboratory and the latter joined the Molecular Genetics & Genomic Laboratory. Both were heavily involved in research and development activities in their respective laboratories; they are anticipated to contribute significantly to the research, teaching and clinical services provided by the Department.

This year witnessed the first list of clinical DNA-based tests offered for some of the more frequently encountered genetic diagnoses through the Molecular Genetics & Genomic Laboratory. Additionally, in February 2014, the SQU Hospital (SQUH) was represented by the Genetic & Developmental Medicine Clinic in the celebration of Rare Disease Day for the first time.

Teaching Programmes

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

**Undergraduate Programmes**

**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 (MDLS3103). It contributes to the Molecular Biology and the Principles of Genetics undergraduate preclinical courses with lectures and tutorials on molecular genetics and cytogenetics. The Department also participates in the annual teaching rotations and training of doctors and students proceeding to the second or third year of their degree. This is achieved through laboratory-based workshops as follows: (1) a biannual workshop for training in standard laboratory techniques in molecular genetics; and (2) rotation of students and doctors in the diagnostic laboratories (Cytogenetics, Immunogenetics and Molecular Genetics). This includes training and an observation course on genetics techniques organised in January and June of each academic year.

**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) junior clerkship clinical genetics and counselling rotation, an intense course format structured rotation that takes place every six 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.
Health; and (5) a genetics lecture for 7th year medical Obstetrics & Gynaecology rotation students repeated every six weeks with 25–28 students in each batch.

The Department participates in the teaching of the following courses in the Medical Laboratory Sciences (MLS) programme: Molecular Diagnosis and Biology of Disease. It also provides lectures on cancer genetics and genetics.

Finally, the Department contributes to the teaching in the Colleges of Agricultural & 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 Departments 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 actively participate in international meetings to ensure adequate CME credits are obtained for the maintenance of their certifications. In 2014, the Molecular Genetics & Genomics Laboratory received visitors from the Ministry of Education. Mr. Sami Al-Kalbani led the training of 24 biology teachers in April 2014.

Clinical & Diagnostic Services

CLINICAL GENETICS

The clinical arm of the Department, represented through the Genetic & Developmental Medicine Clinic aspires to provide standard-of-care services for patients and families with genetic disorders including diagnosis, genetic counseling, management and social support in addition to teaching and research. In 2014, the Clinical Genetics team was involved in the diagnostic evaluation and management of hundreds of patients and their families, including inpatient consultations and outpatient clinic referrals. In the year 2014 alone, the four clinical geneticists made a total of more than 1,100 outpatient consultations with a similar number of inpatient consultations.

The Clinical Genetics team also contributed to the care of metabolic patients, including the inpatient care of patients with inborn errors of metabolism. Nearly 15–30% of acute paediatric admissions are for indications related to inborn errors of metabolism; the Department contributes significantly to the case of these patients as part of a multi-disciplinary care team.

The clinical unit is actively involved in liaising 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 and these are typically associated with on-going research questions that are being explored on a family or individual basis as indicated by clinical needs. So far, several families have been involved in clinical research or are currently considering involvement.

DIAGNOSTIC LABORATORIES

The Department provides diagnostic laboratory services to the SQUH and other local hospitals when specialised testing is judged as clinically necessary. Diagnostic laboratory services include the following sections:

a) Cytogenetics Laboratory;

b) Molecular Genetics & Genomic Laboratory;

c) HLA & Immunogenetics Laboratory.

Biochemical geneticists from the Department also provide interpretative services to the Biochemical Genetics

Table 1: Monthly statistics of conventional cytogenetic karyotyping in 2014

<table>
<thead>
<tr>
<th>Month</th>
<th>Haematological</th>
<th>Non-haematological</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bone marrow</td>
<td>Blood</td>
<td>Blood</td>
</tr>
<tr>
<td>Jan</td>
<td>20</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>Feb</td>
<td>24</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mar</td>
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<td>Apr</td>
<td>22</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>May</td>
<td>19</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Jun</td>
<td>25</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>Jul</td>
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<td>Aug</td>
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<td>Sep</td>
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<td>Oct</td>
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<td>Nov</td>
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<td>2</td>
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</tr>
<tr>
<td>Dec</td>
<td>26</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>285</td>
<td>6</td>
<td>298</td>
</tr>
</tbody>
</table>
Laboratory currently under the administration of the Department of Biochemistry.

**Cytogenetics Laboratory**

The Clinical Cytogenetics Laboratory provides routine service to multiple SQUH departments, including Haematology, Child Health, Obstetrics & Gynaecology and Medicine (urology) as well as the Clinical Genetics team. It provides services to approximately 600 patients per year. During 2014, the Cytogenetics Laboratory received 592 conventional cytogenetic karyotyping test requests. Karyotyping was performed for prenatal, postnatal, haematological and malignant cases.

**Molecular Genetics & Genomics Laboratory**

This laboratory section is involved with the molecular study of disorders with a genetic basis. The Laboratory has completed a major reorganisation of the available space to meet 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. As of 2014, a basic menu of specific clinical tests is available in support of the Genetic & Developmental Medicine Clinic, other specialty clinics within SQUH and beyond. This menu is rapidly expanding. The number of specimens for nucleic acid extraction was 1,400 in 2014 compared to 1,229 in 2013.

**Human Leukocyte Antigen & Immunogenetics Laboratory**

The HLA & Immunogenetics Laboratory is the only national laboratory in Oman providing tissue typing services for the whole country. The Laboratory performed a total of 4,500 tissue typing-related tests in 2014 on approximately 1,000 samples received.

**Research**

**Research Projects**

Molecular epidemiology and diagnosis study of common inborn errors of metabolism disorders in Oman and the United Arab Emirates: Phase 2


**Table 2: Karyotyping statistics by specialty/referral in 2014**

<table>
<thead>
<tr>
<th>Department</th>
<th>Number of referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Haematology</td>
<td>232</td>
</tr>
<tr>
<td>Paediatric Haematology</td>
<td>56</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynaecology</td>
<td>131</td>
</tr>
<tr>
<td>Child Health</td>
<td>59</td>
</tr>
<tr>
<td>Paediatric Neurology</td>
<td>3</td>
</tr>
<tr>
<td>Paediatric Endocrinology</td>
<td>5</td>
</tr>
<tr>
<td>Neonatology</td>
<td>23</td>
</tr>
<tr>
<td>Clinical Genetics</td>
<td>46</td>
</tr>
<tr>
<td>Medicine</td>
<td>5</td>
</tr>
<tr>
<td>Urology</td>
<td>17</td>
</tr>
<tr>
<td>Delivery Ward</td>
<td>2</td>
</tr>
<tr>
<td>Paediatric Intensive Care Unit</td>
<td>1</td>
</tr>
<tr>
<td>Paediatric Surgery</td>
<td>3</td>
</tr>
<tr>
<td>Neonatal Intensive Care Unit</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>592</strong></td>
</tr>
</tbody>
</table>

**Figure 1: Patient samples for conventional cytogenetic karyotyping from 2002–2014.**
Molecular investigation into the chemoprevention of breast cancer by the combination of camel milk and urine: *In vitro* and *in vivo* studies

**Code:** CL/SQU-UAE/14/02  **Dates:** 2014–2015  **Value:** OR 15,000  **Funder:** SQU/UAE Collaborative Fund

**Investigators:** Dr. Allal Ouhtit, Dept. Genetics, SQU; Dr. Yahya Al-Farsi, Dept. Family Medicine & Public Health, SQU; Dr. Khalaf Al-Gharibi, Dept. Pathology, SQU; Dr. Shreesh Ojha, UAE University, Al-Ain, UAE

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

**Code:** SR/MED/GENT/10/01  **Dates:** 2010–2014  **Value:** OR 120,000  **Funder:** His Majesty’s Strategic Research Fund, Oman

**Investigators:** Dr. Allal Ouhtit, Prof. Said Al-Yahyaee, Dept. Genetics, SQU; Dr. Yahya Al-Tamimi, Dept. Biochemistry, SQU; Dr. Mansour Al-Moundhri, Dept. Medicine, SQU; Prof. Madhwa Raj, LSU Health Sciences Center, New Orleans, USA; Prof. Herlyn Meenhard, Dept. Dermatology, Wistar Institute, Pennsylvania, USA.

A new paradigm for the molecular diagnosis of uncharacterized genetic disorders in the Omani population

**Code:** RC/MED/GENT/14/01  **Dates:** 2014–2017  **Value:** OR 163,750  **Funder:** The Research Council Oman

**Investigators:** Dr. Patrick Scott, Dr. Khalid Al-Thihli, Dr. Adila Al-Kindy, Ms. Fathiya Al-Murshedi, Dr. Abeer Al-Mayyeh, Dept. Genetics, SQU; Dr. Yahya Al-Tamimi, Dept. Biochemistry, SQU.

The genetics of cardiometabolic disorders among Arabs from the Oman Family Study

**Code:** RC/MED/GENT/14/02  **Dates:** 2014–2017  **Value:** OR 319,600  **Funder:** The Research Council Oman

**Investigator:** Prof. Said Al-Yahyaee, Dept. Genetics, SQU.

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

**Code:** IG/MED/GENT/12/02  **Dates:** 2012–2014  **Value:** OR 13,970.14  **Funder:** SQU

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

Establishment of human fibroblast cultures for genetic testing in Oman

**Code:** IG/MED/GENT/14/01  **Dates:** 2014–2015  **Value:** OR 36,000  **Funder:** SQU

**Investigators:** Dr. Hamad Al-Riyami, Dr. Allal Ouhtit, Dr. Khalid Al-Thihli, Dept. Genetics, SQU; Dr. Khalifa Al-Wahaibi, Dept. Surgery, SQU.

Mesenchymal stem cells as a tool to repair vascular damage following chemotherapy conditioning regimen

**Code:** IG/MED/GENT/14/02  **Dates:** 2014–2015  **Value:** OR 24,000  **Funder:** SQU

**Investigators:** Mr. Suleiman Al-Hashmi, Dr. Khalid Al-Thihli, Dr. Hamad Al-Riyami, Dept. Genetics, SQU; Dr. Mohamed-Rachid Boullassel, Prof. Salam Alkindi, Dept. Haematology, SQU; Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU; Dr. Naser Al-Wahibi, Mr. Mohammed Al-Kindi, Dept. Pathology, SQU.

Spinal muscular atrophy: An analysis of the genetic knowledge among families attending the Genetic and Developmental Medicine Clinic

**Code:** MREC #881  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Zandre Bruwer, Dept. Genetics, SQU.

Nature and frequency of Y chromosome microdeletions in infertile male Omanis

**Code:** MREC #882  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Patrick Scott, Dept. Genetics, SQU.

Cytogenetic analysis of adult and paediatric patients with myelodysplastic syndrome

**Code:** MREC #896  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. A. M. Udayakumar, Dept. Genetics, SQU.

Water pipe smoking in Oman: Epidemiological and molecular investigation

**Code:** MREC #997  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Allal Ouhtit, Dept. Genetics, SQU.

**RESEARCH PUBLICATIONS & BOOKS**

**Journal Publications**


**CONFERENCE & SEMINAR PRESENTATIONS**

**Poster Presentations**

**International**


THESIS SUPERVISION

Student Name: Rayhana Al-Mejni

Qualification: Ph.D.

Title: Clinical and molecular genetic characteristics of inherited open angle primary glaucoma in the Sultanate of Oman

Supervisor: Prof. Said Al-Yahyaee

Date of completion: Jul 2014
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 Sultan Qaboos University Hospital (SQUH) and referral services to several other hospitals like 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, Professor/Senior Consultant

**Faculty**
Shahina Daar, Associate Professor/Consultant
Mohammed Bulassel, Associate Professor
Mariyam Al-Bakri, Clinical Lecturer (on study leave)
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
Highlights of the Year 2014

In 2014, 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 2014, it offered comprehensive care for approximately 152 patients with transfusion-dependent thalassaemia. Of national interest is the successful bone marrow transplantation (BMT) programme, run by this Department. By the end of December 2014, a total of 297 bone marrow transplants on 284 patients had been performed in this centre, with results as good as those from the best centres around the world.

Teaching Programmes

UNDERGRADUATE PROGRAMME

New Curriculum

The Department developed and taught a new module on Haematolymphatic Immunology in Phase II of the new undergraduate curriculum. It also participated and coordinated the various courses in Phase II of the new curriculum, in particular integrated modules I, II and III. It provided lectures on Introduction to Human Physiology in Phase I. Furthermore, it participated in and coordinated the preclerkship respiratory course and participated in the junior clerkship training with seminars on complete blood count, coagulation and anaemia with additional bedside teaching on sickle cell vaso-occlusive crisis, systolic murmur examination and splenomegaly & lymphadenopathy, as well as a practical demonstration on bone marrow aspirate/trephine.

In the Intercalated Medicine course, the Department provided the Haematology Laboratory rotations. The Department also developed and conducted senior clerkship Phase III teaching, which involves seminars, tutorials and clinical attachments for two weeks in each group, in collaboration with the Department of Child Health 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 OMSB. There are eight residents at various stages of training in the programme.

**Training Courses & CME Activities**

The Department also gave lectures to OMSB residents in Haematology, Paediatrics, Internal Medicine and Obstetrics & Gynaecology. 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 activities.

**Clinical & Diagnostic Services**

Clinical services are provided in the following major areas: adult outpatients (one specialised, four general and one multidisciplinary clinic with orthopaedics); adult inpatients in general haematology; and BMT (four beds in the BMT Unit). The year 2014 saw the establishment of specialised programmes such as the sickle cell anaemia (including both in- and outpatients and both diagnostic and research activities), thalassaemia, leukaemia and myeloma & lymphoma programmes.

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.

Laboratory services cover specialised areas including flow cytometry; haemostasis; haemoglobinopathy; molecular diagnostics; stem cell processing; 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. This year saw the implementation of blood products testing and quality assurance.

<table>
<thead>
<tr>
<th>Table 1: Haematology Laboratory activities from 2008–2014</th>
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<tbody>
<tr>
<td>Year</td>
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<td>2008</td>
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**Bone Marrow Transplantation Programme**

The BMT 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 2014, 26 transplants were performed on 24 patients (21 allogeneic, six haplo-identical, three with bone marrow and 12 peripheral blood stem cell [PBSC] transplantations and five autologous). This makes a total of 297 transplants for 284 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 11 PBSCs from 10 patients (six T cell depleted) and seven bone marrow harvests and cryopreserved them in our liquid nitrogen storage facility for future use. Furthermore, we have also cryopreserved 192 cord blood units (siblings = 123; unrelated = 69) so far as part of the activities of our National Cord Blood Bank.

<table>
<thead>
<tr>
<th>Table 2: Clinical workload from 2008–2014</th>
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<td>Year</td>
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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 and premarital testing) and organising and guiding patients and the medical community regarding SCD care. Recently, the role of the Department has been highlighted through our community outreach programmes 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.

LYMPHOMA AND MYELOMA PROGRAMME

The Department is now an important tertiary care centre for most referrals for adult haematological malignancies, particularly lymphomas and myelomas. 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.

LEUKAEMIA PROGRAMME

This Unit was established at the beginning of 2014 and it caters for referrals of patients with acute leukaemia from SQUH as well as other hospitals in the country and abroad. These patients receive world-class state-of-the-art diagnostic as well as therapeutic interventions, including BMT as needed.

THALASSEMIA PROGRAMME

The Department has been looking after approximately 152 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 magnetic resonance imaging T2* equipment at the Radiology & Molecular Imaging Department has improved the monitoring of the cardiac and liver iron overload status of these patients. Current issues relating to endocrinopathy and infertility are also being investigated.

OUTREACH CLINICS PROGRAMME

The Department conducts a monthly haematology clinic at several hospitals as part of the Outreach Clinics programme. This has really benefited the patient population living in and around the catchment area of these clinics. The implementation of this programme means that these patients do not have to travel all the way to SQUH for routine medications and consultations. Monthly clinics are currently held at Nizwa Hospital, Sohar Hospital and Ibra Hospital and every three months at the Sultan Qaboos Hos-

pital in Salalah and Khasab Hospital in Musandam.

CLINICAL LABORATORY SERVICES

The Haematology Laboratory caters for the entire Hospital and additionally receives referral samples from public and private hospitals 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 bank and donor room services; busulfan pharmacokinetics; and the molecular division.

General Haematology

General haematology services operate around the clock and provide services to the Hospital 24/7. Services include routine full blood counts, erythrocyte sedimentation rates, initial haemoglobinopathy screening including SICKLEDEX® testing and glucose-6-phosphate dehydrogenase screening. Bone marrow aspirate samples and cerebrospinal fluid examinations are also processed. This section also operates specialised tests like flow cytometry for SQUH as well as referrals from other hospitals in the country.

Haemostasis & Haemoglobinopathy

This section performs routine and advance testing for bleeding and thrombophilia workups. We are also the referral centre for haemoglobinopathy testing. Both of these sections are complemented with diagnostic workup support from the molecular section as needed.

Blood Bank & Apheresis Unit

The Blood Bank handles the donor room as well as a supply of blood and blood products for the whole Hospital and beyond. This includes blood collection, products preparation and processing, as well as quality assurance testing. On the clinical side, the Blood Bank provides blood grouping and antibody screening for various haematological patients. Also, the Department has now installed the Baxter Amicus™ and COBE® Spectra Optia apheresis systems and our nurses and technicians are trained in their use. All of 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.

In 2014, we performed bone marrow harvesting for the autologous backup of patients undergoing transplantation in seven cases. Additionally, in 11 cases, we performed peripheral blood stem cell cryopreservation for patients undergoing autologous/allogeneic transplantsations.

Furthermore, apheresis services are now available, in consultation with the attending haematologist, to the SQUH wards and intensive care units whenever the need for plasmapheresis or plasma exchange arises.

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: sibling cord blood (SCB) and unrelated cord blood (UCB). Up to December 2014, we had collected a total of 192 SCB units (SCB = 123 units; UCB = 69 units). So far, three SCB units have been used in SCB transplantations.

### Busulfan Pharmacokinetics

Optimisation of busulfan dosage in patients undergoing BMT is recommended in order to reduce the toxic effects associated with high drug levels. The API 150EX™ LC/MS system, which was installed for a research project on intravenous versus oral busulfan in BMT for thalassaemia, is now fully operational. This section takes care of busulfan pharmacokinetics in patients undergoing BMT to assess the blood levels of the drug in order to optimise treatment protocols. We have thus far performed pharmacokinetic studies on 12 patients for this purpose. A new API 3200™ LC/MS/MS system was installed in the Department in December 2014.

### Molecular Research & Diagnostic Services

The Department now offers molecular 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. This section receive samples from our Hospital, other health institutes in Oman and from abroad.

### Research

#### Research Projects

**Testing the Bregs cell hypothesis in sickle cell disease: Implications for pathogenesis**

- **Code:** RC/MED/HAEM/14/01
- **Dates:** 2014–2015
- **Value:** OR 83,520
- **Funder:** The Research Council, Oman
- **Investigator:** Dr. Mohammed Bulassel, Dept. Haematology, SQU.

**Clinical and molecular characterisation of von Willebrand disease patients in Oman**

- **Code:** RC/MED/HAEM/14/02
- **Dates:** 2014–2017
- **Value:** OR 49,500
- **Funder:** The Research Council Oman
- **Investigators:** Dr. Anil Pathare, Prof. Salam Alkindi, Dr. Shoaib Al-Zadjali, Ms. Karima Al-Falahi, Dept. Haematology, SQU.

**Understanding the cross-talk among regulatory immune cells in lymphomas: A link to improve the efficacy of immunotherapeutic strategies**

- **Code:** IG/MED/HAEM/14/01
- **Dates:** 2014–2015
- **Value:** OR 21,000
- **Funder:** SQU
- **Investigators:** Dr. Mohamed Bulassel, Dr. Khalil Al-Farsi, Dr. Murtadhah Al-Kabori, Dept. Haematology, SQU; Dr. Ikram Burney, Dept. Medicine, SQU; Dr. Sulaiman Al-Hashmi, Dept. Genetics, SQU; Dr. Oukil, Dept. Management & Business Statistics, College of Science, SQU; Dr. Alya Al-Ansari, Dept. Biology, College of Science, SQU.

**A phase 3 randomised, double-blind, placebo-controlled, multicentre clinical trial of MST-188 (purified poloxamer 188) injection in children with sickle cell disease experiencing vaso-occlusive crisis**

- **Code:** EG/MED/HAEM/14/01
- **Dates:** 2014–2015
- **Value:** OR 58,300
- **Funder:** SQU
- **Investigator:** Dr. Murtadhah Al-Kabori, Dept. Haematology, SQU.

**Identification and quantification of haemoglobin variants using CAPILLARYS 2 Sebia Flex Piercing machine and Bio-Rad Variant II high-performance liquid chromatography (HPLC) method: A prospective study**

- **Code:** MREC #853
- **Dates:** 2014
- **Value:** Unfunded
- **Funder:** SQU
- **Investigator:** Prof. Salam Alkindi, Dept. Haematology, SQU.

**Registry of treatment patterns in adult patients with haematological malignancies treated by haematopoietic stem cell transplantation (HSCT) with bone marrow or peripheral blood being the source of haematopoietic stem cells**

- **Code:** MREC #856
- **Dates:** 2014
- **Value:** Unfunded
- **Funder:** SQU
- **Investigator:** Dr. David Dennison, Dept. Haematology, SQU.

**Genetic modifiers of the beta-thalassaemia phenotype**

- **Code:** MREC #857
- **Dates:** 2014
- **Value:** Unfunded
- **Funder:** SQU
- **Investigator:** Dr. Shahina Daar, Dept. Haematology, SQU.
Comparative analysis of free protein S quantity using enzyme-linked immunosorbent assay (ELISA) technique and coagulation automated analyser

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

Immunophenotypic analysis of circulating B regulatory cells in haemophilia A patients with anti-factor VIII antibodies

Investigator: Dr. Mohammed Bulassel, Dept. Haematology, SQU.

Efficacy of deferiprone monotherapy in maintaining low iron load in patients with thalassaemia major

Investigator: Dr. Shahina Daar, Dept. Haematology, SQU.

Comparison of three molecular testing methods for the detection of FLT3/ITD and NPM1 mutations in acute myeloid leukaemia

Investigator: Dr. Shoaib Al-Zadjali, Dept. Haematology, SQU.

Transfusion knowledge in OMSB residents: A survey

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

Ethnic neutropenia in the Omani population: Possible association with the Duffy antigen/receptor chemokine (DARC), HS-1 associated protein X-1 (Hax-1) and Elastase 2 (ELA-2) genes

Investigator: Dr. Naglaa Fawaz, Dept. Haematology, SQU.

The prevalence of silent cerebral infarct and detection of paraspinal extramedullary haematopoiesis on magnetic resonance imaging in beta-thalassaemia intermedia in Oman

Investigator: Dr. Shahina Daar, Dept. Haematology, SQU.

Red blood cell extended antigen phenotype among the Omani population

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

Cytogenetic profile and prognostic significance in adult and paediatric Omani acute myeloid leukaemia at SQUH

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

Evaluation of purified poloxamer 188 in vasoo-cclusive crisis of sickle cell disease (EPI): A phase 3 randomised, double-blind, placebo-controlled, multicentre clinical trial of MST-188 injection in subjects with sickle cell disease experiencing vasoo-cclusive crisis

Investigator: Dr. Murad Al-Kabori, Dept. Haematology, SQU.

Registry treatment patterns in adult patients with haematological malignancies treated by haematopoietic stem cells: TRIBUT study

Investigator: Dr. David Dennison, Dept. Haematology, SQU.

A phase 3 double-blinded, randomised, efficacy and safety comparison of prasugrel and placebo in paediatric patients with sickle cell disease

Investigator: Prof. Salam Alkindi, Dept. Haematology, SQU.

Consent for blood transfusion: Assessment of first year of implementation at SQUH

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

Targeted versus fixed busulfan dosing in preparative regimens for bone marrow transplant in Omani patients

College of Medicine & Health Sciences and Sultan Qaboos University Hospital

Investigator: Dr. Murtadha Al-Kabori, Dept. Haematology, SQU.

**CALR** gene mutations in Omani patients with myeloproliferative neoplasm

**Code:** MREC #976 **Dates:** 2014 **Value:** Unfunded Project Approval: SQU

Investigator: Dr. Shoaib Al-Zadjali, Dept. Haematology, SQU.

Prospective multicentre observational registry of treatments and outcomes in patients with chronic lymphocytic leukaemia or indolent non-Hodgkin’s lymphoma

**Code:** MREC #999 **Dates:** 2014 **Value:** Unfunded Project Approval: SQU

Investigator: Prof. Salam Alkindi, Dept. Haematology, SQU.

Clinical and molecular characterisation of von Willebrand disease patients in Oman

**Code:** MREC #1017 **Dates:** 2014 **Value:** Unfunded Project Approval: SQU

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

**RESEARCH PUBLICATIONS & BOOKS**

**Journal Publications**


18. Al-Tamemi S, Al-Zadjali S, Al-Ghafri F, Dennison D.


**BOOKS**


**CONFERENCE & SEMINAR PRESENTATIONS**

**Seminar Presentations**

**National**


2. Alkindi S. Bone marrow transplant for SCD. Nizwa Hospital, Nizwa, Oman, 18 Jun 2014.


4. Alkindi S. An overview of sickle cell disease. Ibra Hospital, Ibra, Oman, 15 Nov 2014.


7. **Daar S.** Non-transfusion dependent thalassaemias: What the general practitioner needs to know. Non-Transfusion Dependent Thalassemia (NTDT), Muscat, Oman, 15 Feb 2014.


9. **Daar S.** SCD. National Laboratory Symposium, Ibra Hospital, Ash Sharqiya, Oman, 14 May 2014.


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**THESIS SUPERVISION**

<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><strong>Uhoud A. S. Alsaadi</strong></td>
<td>B.Sc. MLS</td>
<td>Effect of resistant red blood cells on the automated total and differential white blood cells count using the Cell-Dyn Sapphire</td>
<td>Ms. Heidi Davis and Dr. Mohamed Bulassel</td>
<td>May 2014</td>
</tr>
<tr>
<td><strong>Meena S. J. Al-Ka’abi</strong></td>
<td>B.Sc. MLS</td>
<td>Comparative analysis of free protein S quantity using enzyme-linked immunosorbent assay (ELISA) technique and coagulation automated analyser</td>
<td>Dr. Anil Pathare and Ms. Karima Al-Falahi</td>
<td>May 2014</td>
</tr>
<tr>
<td><strong>Suaad S. M. Al-Badi</strong></td>
<td>B.Sc. MLS</td>
<td>Comparison of three molecular testing methods for the detection of FLT3-ITD and NPM1 mutations in acute myeloid leukaemia</td>
<td>Dr. Shoaib Al-Zadjali</td>
<td>May 2014</td>
</tr>
<tr>
<td><strong>Rahma Z. S. Al-Shukaili</strong></td>
<td>B.Sc. MLS</td>
<td>Evaluation of circulating B cell subsets in patients with sickle cell anaemia</td>
<td>Dr. Mohamed Bulassel</td>
<td>May 2014</td>
</tr>
<tr>
<td><strong>Sheikha M. H. Al-Hajri</strong></td>
<td>B.Sc. MLS</td>
<td>Comparison study between capillary electrophoresis (Sebia Flex2) and high-performance liquid chromatography (Bio Rad VariantII) for the detection of haemoglobin abnormalities of both deletional and non-deletional types</td>
<td>Mr. Hamood Al-Haddabi and Prof. Salam Alkindi</td>
<td>May 2014</td>
</tr>
</tbody>
</table>
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 Phase 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 the Oman Medical Specialty Board (OMSB) candidates. Postgraduate teaching involves the teaching of advanced histology and embryology to candidates specialising in histopathology and obstetrics and 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.
Annual Report 2014

Staff

Head of Department
Omar Habbal, Associate Professor

Faculty
Ibrahim Inuwa, Associate Professor
Varna Taranikanti, Assistant Professor
Sadhana Roychoudhury, Assistant Professor
Mohamed Al-Mushaiqri, Lecturer

Support Staff
Sulaiman Al-Khiyari, Superintendent
Abdulgaffar El-Hag, College Superintendent
Nasser Al-Hashmi, Biomedical Scientist (on study leave)
Nawal Al-Mukheini, Biomedical Scientist (on study leave)
Talal Al-Hassani, Biomedical Scientist
Musallam Al-Alawi, Biomedical Scientist
Prem Tilaka, Biomedical Scientist
Indrani Arambewela, Biomedical Scientist
Alexander George, Coordinator

Highlights of the Year 2014
Dr. Sujata Jog and Dr. Mirghani Osman were visiting Consultants in the Department from February 2014 to June 2014. Dr. Ibrahim Inuwa left the department in June 2014.

Teaching Programmes

Undergraduate Programmes

Preclinical 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 curriculum were: Introduction to Anatomy; Structure-Function Relationship; Growth & Development; Integrated Module I; Cardiovascular System; Respiratory System; Haemo, Lymph, Immune Systems; Integrated Module II; Alimentary System; Uro-reproductive System; Integrated Module III; Locomotor System; Nervous System & Special Senses; Endocrine System.

B.Sc. Nursing Programme
The Department offered Anatomy and Physiology courses in the B.Sc. Nursing programme for the College of Nursing.

Clinical Programme
The Department contributes to the preclerkship stage of Phase III of the M.D. curriculum.

Postgraduate Programme
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


Investigators: Dr. Omar Habbal, Dept. Human & Clinical Anatomy, SQU; Prof. Ali Al-Jabri, 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, Ms. Kawther Al-Adawi, Dept. Pathology, SQU; Prof. Shyam Ganguly, Dept. Family Medicine & Public Health, SQU.

Conference & Seminar Presentations

Seminar Presentations
National
2. Taranikanti V, Choudhary SR, Habbal O, Al Harrasi A. Cadaveric workshop: 3D training model for ultrasound guided peripheral nerve blocks. Oman-New York Society of Regional Anaesthetists (NYSORA) 1st International Symposium on Ultrasound-Guided Regional Anaesthesia, Sultan Qaboos University Hospital, Muscat, Oman, 7–8 Nov 2014.
3. Choudhary SR. Neuroanatomy sessions: Anatomical basis of learning disabilities in children. College of Education, Sultan Qaboos University, Muscat, Oman, 6 May 2014.
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 patients in the area required. Consultants are on-call daily from 10 different subspecialties: cardiology; endocrinology; gastrointestinal and liver disease; general internal medicine; infectious diseases; 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

Assistant Head of Department
Dawood Al-Riyami, Senior Consultant

Faculty
Omar Al-Rawas, Professor, Dean
Bazdawi M. Al-Riyami, Professor
Nicholas Woodhouse, Professor
Mansour Al-Moundhri, Professor
Arundodaya Gujjar, Professor
Nabil Al-Lawati, Associate Professor
Jamal Sallam, Assistant Professor
Batool Hassan, Assistant Professor

Poovathor C. Jacob, Assistant Professor
Muhammad A. Sadiq, Assistant Professor
Mohammed Athar, 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
Hafidh Al-Hadi, Senior Consultant
Mansour Sallam, Senior Consultant
Abdullah Balkhair, Senior Consultant
Abraham O. Cherian, Senior Consultant
Juma Al-Kaabi, Senior Consultant

Omayma El-Shafie, Senior Consultant
B. N. Jayakrishnan, Senior Consultant
Jojoy George, Senior Consultant
Adil B. Al-Riyami, Senior Consultant
Issa S. Al-Qarshoubi, Senior Consultant
Nandhogopal R., Senior Consultant
Muhammad Furruhk, Senior Consultant
Sunil Nadar, Senior Consultant
Ahmed Al-Farqani, Consultant
Hatem Farhan, Consultant

Mohammed Al-Ghilani, Consultant
Hatim A. Al-Lawati, Consultant
Wasif Rasool, Consultant
Said A. Al-Busafi, Consultant
Abdulhakim Al-Hashim, Consultant
Mujahid Al-Busaidi, Consultant
Zeid A. Gaifer, Consultant
Saif Khan, Consultant
Shiyam Kumar, Consultant
Saif Al-Mubaishi, Consultant

Muhammad A. Khatri, Senior Specialist
Mohammed Misbah, Senior Specialist
Mohammed M. Shaikh, Senior Specialist
Osama Tariq, Senior Specialist

Suneel Kumar, Senior Specialist
Abdulmanan Khaskhel, Senior Specialist
Khalifa B. Al-Zeedy, Senior Specialist
Osama Hassan, Senior Specialist
Ammar A. Al-Obaidy, Senior Specialist
Darshan Lal, Senior Specialist
Sajid M. Mohd, Senior Specialist
Khawaja F. Zahid, Senior Specialist
Dawar M. Rizavi, Senior Specialist
Babar Dildar, Senior Specialist
Kowthar Hassan, Senior Specialist
Ali Al-Lawati, Senior Specialist
Khaled Al-Baimani, Senior Specialist
Ibrahim Al-Busaidi, Senior Specialist
Mohammed Al-Rawahi, Senior Specialist
Fatima Aamer, Specialist
Nooraldin Mahmood, Specialist
Farooq M. Rehman, Specialist
Leena Bella, Specialist
Tanwer Ahmed, Specialist
Nisreen Siddiq, Specialist
Taha D. Al-Mufti, Specialist
Zaheer Alisiddiq, Specialist
Jawahir Lal, Specialist
Abdullah Al-Alawi, Specialist
Ahmed Al-Qassabi, Specialist
Jamal N. Al-Agbhari, Specialist
Hashim BaTaher, Specialist
Ahmed Al-Riyami, Specialist
Haifa Al-Abri, Specialist
Yasser Waadallah, Specialist
Ali Al-Shemmari, Specialist
Sara Aziz, Senior House Officer
Anjum H. Osman, Senior House Officer
Zeyana Al-Hadrami, Senior House Officer
Nasreen El-Fatih, Senior House Officer
Wael M. Mekki, Senior House Officer
Mohamed E. M. Ali, Senior House Officer
Zamzam Al-Hashami, Clinical Lecturer, Senior House Officer
Khalid R. Al-Shamousi, Clinical Lecturer, Senior House Officer
Abdullah M. Al-Ismailli, Clinical Lecturer, Senior House Officer

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

Support Staff
Roselyn Natividad, Coordinator
Ghaniya Al-Siyabi, Coordinator
Maryam Al-Baloushi, Coordinator
Ibrahim Al-Shoaibi, Coordinator

Highlights of the Year 2014

In this period, the Department of Medicine continued to play a major role in the College of Medicine & Health Sciences (COM&HS) and Sultan Qaboos University Hospital (SQUH).
Members of the Department took part in research with 49 publications in addition to actively participating in many conferences and meetings. Staff of the Department had the largest share in teaching, helping to form the curriculum as well as writing, coordinating and delivering examinations. In terms of clinical services, expansion in all fields was noted with new services added and an increasing number of patients attending outpatient clinics and full bed capacity due to the high number of inpatients.

Dr. Hatem Farhan won the “Best Trainer” prize from the Oman Medical Specialty Board (OMSB) for the second time. The Department recently participated in the strategic plans for Centre of Excellences; three disciplines were selected as future centers (Cardiopulmonary Diseases, Cancer and Neurosciences) in addition to two programmes (Nephrology and Infectious Diseases).

Dr. Hatim Al-Lawati, Dr. Mujahid Al-Busaidi and Dr. Saif Al-Mubaishi rejoined the Department after completing scholarships. Newly appointed staff in 2014 included: Dr. Nabil Al-Lawati (Nephrology Unit), Dr. Sunil Nadar (Cardiology Unit), Dr. Mohammed Athar, (Cardiology Unit) and Dr. Abraham O. Cherian (Infections Diseases Unit). The following staff were promoted: Dr. Nandhagopal R., Senior Consultant, Dr. Abdulhakim Al-Hashim, Consultant, Dr. Shiyam Kumar, Consultant, Dr. Adil Al-Riyami, Senior Consultant, Dr. Khaled Al-Baimani, Senior Specialist (on study leave), Dr. Ali Al-Lawati, Senior Specialist (on study leave), Dr. Mohammed Al-Rawahi, Senior Specialist (on study leave), Dr. Zaheer Alisiddiq, Specialist and Dr. Taha Al-Mufti, Specialist. Dr. Yasser Waadallah and Dr. Ali Al-Shemmari resigned from the Department.

In summary, the Department will continue its mission among all disciplines and will do its best to overcome any difficulties it should face, taking these as a platform for corrections to ensure better outcomes in future.

Teaching Programmes

UNDERGRADUATE PROGRAMMES

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 and respiratory systems; Integrated Module II, which covers the gastrointestinal system in addition to nutrition; and Integrated Module III, which covers the nervous, endocrine and locomotor systems. The teaching took the form of formal lectures, tutorials and bedside teaching activities.

Preclerkship Programme

This section of Phase III consists of nine weeks of rotations per year. The Department contributes heavily to three modules (Cardiovascular, Respiratory and Neurology), in addition to the Musculoskeletal System module with the Department of Surgery.

Preclerkship students, divided into nine groups, are posted for a week each in nine different components of the programme. Three of these components (Cardiovascular, Central Nervous and Respiratory Systems) were undertaken in the Department of Medicine. Unlike other departments, three groups of students (a total of 42 students) were posted together in the Department of 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 a 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 Programme

This part of the 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 three, five and seven and a long case in weeks four and six. 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 Programme

Similar to the junior clerkship programme, this part of Phase III consists of eight-week rotations throughout the year for six groups: seven weeks clinical rotation in Medicine and one week in SLT. During the seven 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 essential knowledge of medicine topics 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 2015, is on-going.

Pre-internship

This part of Phase III is divided into four major rotations (including medicine) every three weeks for a total of 12 weeks. Around 30 pre-interns per rotation are distributed equally amongst four acute medicine teams in SQUH and Royal Hospital. The main goal of this rotation is to train students regarding patient management skills in order to bridge the gap in approach between a medical student and a junior doctor/intern. In other words, pre-interns have similar tasks to those of interns and are stationed in the ward and have on-call duties. Their responsibilities include: clerical work for new admissions; collecting blood samples; ordering investigations and tracking the results; and conducting their own rounds prior to the consultants. Pre-interns are continuously assessed on two major components: clinical competency and professionalism.

Clinical Elective Programme

The Department receives approximately 10–12 international and local students annually to complete a clinical rotation. In 2014, the Department received one student from New Zealand, two from Ireland, four from the Netherlands, one from Germany, one from the USA, one from Bahrain and three from the Oman Medical College.

Final M.D. Examination

The final M.D. examination was conducted in June 2014; this was the first integrated examination reflecting the new integrated curriculum. It consisted mainly of two integrated sections: written and clinical (short cases).

Postgraduate Programme

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 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 the Department. Residents receive supervised training on ward rotations and during electives to 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 Departments of Emergency Medicine and Family Medicine & Public Health.

Training Courses & CME Activities

CME sessions are held every alternate Monday morning. Wednesday lunchtimes 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 & Continuing Professional Development (CPD) in conjunction with the Directorate of Nursing Services in SQUH. Dr. Ikram Burney and Dr. Muhammad Furrukh regularly deliver lectures at the Chemotherapy Administration Course organised by the Directorate of Training & CPD in conjunction with the Directorate of Nursing Services at SQUH.

Clinical & Diagnostic Services

In 2014, there were 133,626 total patients (including both inpatients and outpatients) compared to 69,435 in 2013. The total number of procedures done by the Gastroenterology Unit in 2014 was 2,263. As for the bronchoscopies done by the Pulmonology Unit, there were 135 procedures in 2014 compared to 99 in 2013.

In 2014, the Department delivered excellent care. The below cardiology services were provided:

- Full-time 24-hour coverage for primary percutaneous coronary interventions (PCIs) as an emergency invasive treatment for acute ST-elevation myocardial infarctions.
- High-risk main left PCIs using intra-vascular ultrasound guidance.
- Multivessel PCIs in patients with severe left ventricular systolic dysfunction and cardiogenic shock.
- Antegrade canalisation of chronic total occlusions.
- Transcatheter aortic valve implantation (TAVI) by members of the TAVI team at SQUH with specialised training, including a primary operator in the transfemoral approach and secondary operator in transapical and transaortic approaches.
Percutaneous transvenous mitral commissurotomies (PTMCs). The first PTMC in Oman was successfully performed at SQUH in May 2014. There are four successful cases so far.

- Haemodynamic studies, including assessment of multiple valve lesions and pulmonary vasoreactivity studies for patients with pulmonary hypertension.
- Suture-based vascular closure devices for arteriotomies. Dr Hatim Al-Lawati was the first operator in Oman to be certified in the use of these devices for arteriotomies.

Table 1: Inpatient and outpatient statistics in 2014

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Inpatients</th>
<th>Outpatients</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>2,264</td>
<td>17,416</td>
<td>19,680</td>
</tr>
<tr>
<td>Clinical physiology, cardiology</td>
<td>0</td>
<td>3,005</td>
<td>3,005</td>
</tr>
<tr>
<td>Clinical physiology, neurophysiology</td>
<td>0</td>
<td>3,165</td>
<td>3,165</td>
</tr>
<tr>
<td>Clinical physiology, respiratory</td>
<td>0</td>
<td>1,642</td>
<td>1,642</td>
</tr>
<tr>
<td>Diabetic</td>
<td>46</td>
<td>14,296</td>
<td>14,342</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>371</td>
<td>121</td>
<td>492</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>2,778</td>
<td>11,118</td>
<td>13,896</td>
</tr>
<tr>
<td>Infectious diseases</td>
<td>132</td>
<td>2,208</td>
<td>2,340</td>
</tr>
<tr>
<td>Lipid conditions</td>
<td>0</td>
<td>4,320</td>
<td>4,320</td>
</tr>
<tr>
<td>Medicine</td>
<td>2,566</td>
<td>2,440</td>
<td>5,006</td>
</tr>
<tr>
<td>Nephrology</td>
<td>2,324</td>
<td>3,860</td>
<td>6,184</td>
</tr>
<tr>
<td>Neurology</td>
<td>1,292</td>
<td>14,630</td>
<td>15,922</td>
</tr>
<tr>
<td>Oncology</td>
<td>8,016</td>
<td>5,860</td>
<td>13,876</td>
</tr>
<tr>
<td>Pulmonology</td>
<td>788</td>
<td>9,698</td>
<td>10,486</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>1,344</td>
<td>8,352</td>
<td>9,696</td>
</tr>
<tr>
<td>Thyroid conditions</td>
<td>0</td>
<td>9,574</td>
<td>9,574</td>
</tr>
<tr>
<td>Total</td>
<td>21,921</td>
<td>111,705</td>
<td>133,626</td>
</tr>
</tbody>
</table>

Table 2: Consultation statistics in 2014

<table>
<thead>
<tr>
<th>Referral</th>
<th>Inpatients</th>
<th>Outpatients</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>365</td>
<td>29</td>
<td>394</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>718</td>
<td>51</td>
<td>769</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>259</td>
<td>41</td>
<td>300</td>
</tr>
<tr>
<td>Infectious diseases</td>
<td>3,073</td>
<td>19</td>
<td>3,092</td>
</tr>
<tr>
<td>Lipid Clinic</td>
<td>2</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Nephrology</td>
<td>371</td>
<td>10</td>
<td>381</td>
</tr>
<tr>
<td>Neurology</td>
<td>290</td>
<td>28</td>
<td>318</td>
</tr>
<tr>
<td>Oncology</td>
<td>25</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>Pulmonology</td>
<td>473</td>
<td>26</td>
<td>499</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>142</td>
<td>28</td>
<td>170</td>
</tr>
<tr>
<td>Total</td>
<td>5,718</td>
<td>248</td>
<td>5,966</td>
</tr>
</tbody>
</table>

Table 3: Gastrointestinal Unit procedures in 2014

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oesophagogastroduodenoscopy</td>
<td>1,178</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>632</td>
</tr>
<tr>
<td>Endoscopic retrograde cholangiopancreatography</td>
<td>78</td>
</tr>
<tr>
<td>Push enteroscopy</td>
<td>5</td>
</tr>
<tr>
<td>Transnasal oesophagogastroduodenoscopy</td>
<td>10</td>
</tr>
<tr>
<td>Percutaneous endoscopic gastric tube insertion</td>
<td>32</td>
</tr>
<tr>
<td>Endoscopic ultrasound</td>
<td>26</td>
</tr>
<tr>
<td>Colonic polypectomy</td>
<td>97</td>
</tr>
<tr>
<td>Gastric polypectomy</td>
<td>14</td>
</tr>
<tr>
<td>Oesophageal metallic stent insertion</td>
<td>4</td>
</tr>
<tr>
<td>Duodenal metallic stent insertion</td>
<td>2</td>
</tr>
<tr>
<td>Gastric metallic stent insertion</td>
<td>3</td>
</tr>
<tr>
<td>Colonic metallic stent insertion</td>
<td>1</td>
</tr>
<tr>
<td>Oesophageal varices banding</td>
<td>37</td>
</tr>
<tr>
<td>Endoscopic oesophageal dilatation</td>
<td>20</td>
</tr>
<tr>
<td>Endoscopic clipping/injection for bleeders</td>
<td>81</td>
</tr>
<tr>
<td>Endoscopic argon plasma coagulation</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>2,263</td>
</tr>
</tbody>
</table>

Table 4: Respiratory procedures in 2014

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronchoscopy</td>
<td>135</td>
</tr>
<tr>
<td>Pleural procedures</td>
<td>34</td>
</tr>
<tr>
<td>Pulmonary function test</td>
<td>1,161</td>
</tr>
<tr>
<td>Total</td>
<td>1,330</td>
</tr>
</tbody>
</table>

• Percutaneous transvenous mitral commissurotomies (PTMCs). The first PTMC in Oman was successfully performed at SQUH in May 2014. There are four successful cases so far.

• Haemodynamic studies, including assessment of multiple valve lesions and pulmonary vasoreactivity studies for patients with pulmonary hypertension.

• Suture-based vascular closure devices for arteriotomies. Dr Hatim Al-Lawati was the first operator in Oman to be certified in the use of these devices for arteriotomies.
The Pulmonology Unit, along with the Department of Physiology, started providing the cardiopulmonary exercise test (also known as ergospirometry), achieving another milestone in the diagnosis and management of respiratory issues. This facility is not available at any other hospital in the country at the moment. In the Nephrology Unit, a new specialist clinic for glomerulonephritis was opened. The Neurology Unit launched the Stroke Unit for treatment of thrombolysis in cerebrovascular accidents. Finally, the Oncology Unit initiated the use of home-based chemotherapy treatments using pumps.

### Research

#### RESEARCH PROJECTS

A comprehensive study of central nervous system (CNS) demyelinating disorders in Omani patients: Clinical profile, serological profile of neuromyelitis optica autoantibody, optical coherence tomographic abnormalities and alterations in bone mineral density and metabolism

**Code:** RC/MED/MEDI/13/01  **Dates:** 2013–2015  **Value:** OR 156,650  **Funder:** The Research Council, Oman

**Investigator:** Dr. Poovathor Jacob, Dept. Medicine, SQU.

Clinical and electrophysiological profile of patients with primary generalised epilepsy referred to SQUH

**Code:** IG/MED/MEDE/13/03  **Dates:** 2013–2015  **Value:** OR 13,400  **Funder:** SQU

**Investigators:** Dr. Abdullah Al-Asmi, Dr. Nandhagopal R., Dept. 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. Physiology, SQU; Dr. Fathiya Al-Murshedi, Dept. Genetics, SQU.

Levetiracetam versus phenytoin for status epilepticus and cluster seizures: A prospective, randomised study

**Code:** IG/MED/MEDE/14/01  **Dates:** 2014–2015  **Value:** OR 13,000  **Funder:** SQU

**Investigators:** Prof. Arunodaya Gujjar, Dr. Abdullah Al-Asmi, Dr. Nandhagopal R., Dr. Poovathor Jacob, Dept. Medicine, SQU; Prof. Shyam Ganguly, Dept. Family Medicine & Public Health, SQU.

Complications of endoscopic retrograde cholangiopancreatography (ERCP) and their risk factors

**Code:** MREC #863  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Issa Al-Qarshoubi, Dept. Medicine, SQU.

Serial cases of combining extracorporeal shock wave lithotripsy (ESWL) and endoscopic retrograde cholangiopancreatography (ERCP) procedures in management of complicated large and difficult common bile duct stones: Sultan Qaboos University Hospital experience

**Code:** MREC #864  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Issa Al-Qarshoubi, Dept. Medicine, SQU.

The outcome of acute portal vein thrombosis with or without anticoagulation in Omani population: A single tertiary hospital experience

**Code:** MREC #865  **Dates:** 2014–2015  **Value:** Unfunded
Project Approval: SQU
Investigator: Dr. Issa Al-Qarshoubi, Dept. Medicine, SQU.
Patient characteristics, treatment and survival for patients with colorectal cancer in Oman: A single center study
Project Approval: SQU
Investigator: Dr. Shiyam Kumar, Dept. Medicine, SQU.
Clinical and laboratory profile of primary hyperparathyroidism in a tertiary hospital in Oman
Project Approval: SQU
Investigator: Prof. Nicholas Woodhouse, Dept. Medicine, SQU.
Challenge to reduce crossover from radial to femoral access for coronary procedures: “RURU” approach - A single centre, single operator experience
Project Approval: SQU
Investigator: Dr. Mansour Sallam, Dept. Medicine, SQU.
Association between azathioprine therapy and the risk of developing haematological complications in Omani patients treated at SQUH
Project Approval: SQU
Investigator: Dr. Wasif Rasool, Dept. Medicine, SQU.
Examining the association of hepatitis, pancreatitis and use of azathioprine (AZA) therapy across different indications in SQH: A retrospective study
Project Approval: SQU
Investigator: Dr. Wasif Rasool, Dept. Medicine, SQU.
Serum chromogranin A levels in obstructive airway diseases: A case control study
Project Approval: SQU
Investigators: Prof. Nicholas Woodhouse, Dr. B. Jayakrishnan, Dept. Medicine, SQU; Ms. Nafaa Al-Kindi, COM&HS Student, SQU.
Serum chromagranin A levels in patients with diffuse parenchymal lung disease
Project Approval: SQU
Investigators: Prof. Nicholas Woodhouse, Dr. B. Jayakrishnan, Dept. Medicine, SQU; Mr. Muadh Al-Zeedi, COM&HS Student, SQU.
COM&HS Student, SQU.
Determinants of seeking second opinion outside of Oman in suspected or newly diagnosed cancer patients in Oman: A qualitative study
Project Approval: SQU
Investigator: Dr. Ikram Burney, Dept. Medicine, SQU.
The psychosocial impact of chronic hepatitis B infection in Omani patients
Project Approval: SQU
Investigator: Dr. Said Al-Busafi, Dept. Medicine, SQU.
Physician compliance with the National Asthma Guidelines
Project Approval: SQU
Investigator: Ms. Sawsan Baddar, Dept. Medicine, SQU.
Role of inflammatory biomarkers in early detection of trastuzumab-induced cardiotoxicity
Project Approval: SQU
Investigators: Dr. Khawaja Zahid, Dr. Ikram Burney, Prof. Mansour Al-Moundhri, Dr. Shiyam Kumar, Dept. Medicine, SQU.
Mycobacterium infection as a predictor for suboptimal helper CD4+ T cell recovery in treated HIV patients
Project Approval: SQU
Investigator: Dr. Zeid Gaifer, Dept. Medicine, SQU.
The outcome of ultrasonic screening for hepatocellular carcinoma in high-risk Omani population: A single tertiary hospital experience
Project Approval: SQU
Investigator: Dr. Issa Al-Qarshoubi, Dept. Medicine, SQU.
Obtaining norms for Arabic translated version of semantic fluency and naming tests of CERAD neuropsychological battery in normal elderly Omanis
Project Approval: SQU
Investigator: Dr. Ammar Al-Obaidy, Dept. Medicine, SQU.
Screening for depression by using Arabic translated version of geriatric depression scale in normal elderly Omani undergoing cognitive assessment at SQUH

Investigator: Dr. Ammar Al-Obaidy, Dept. Medicine, SQU.

Obtaining norms for the Arabic translated version of the Mini Mental Status Examination (MMSE) cognitive test in normal elderly Omani

Investigators: Dr. Ammar Al-Obaidy, Dept. Medicine, SQU.

Obtaining norms for Arabic translated version of the verbal learning, delayed recall and recognition tests of CERAD neuropsychological battery in normal elderly Omani

Investigator: Dr. Ammar Al-Obaidy, Dept. Medicine, SQU.

Medical tourism abroad: A tertiary hospital experience for Omani patients with neurological disorders

Investigator: Dr. Abdullah Al-Asmi, Dept. Medicine, SQU.

Prevalence of metabolic syndrome in kidney disease patients at SQUH

Investigator: Dr. Nabil Al-Lawati, Dept. Medicine, SQU.

Seroprevalence of hepatitis B in blood donors in a tertiary care hospital in Oman

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

Non-invasive haemodynamic profile of hypertensive Oman subjects using thoracic electrical bio-impedance cardiography

Investigators: Prof. Arunodaya Gujjar, Ms. Haifa Al-Abrì, Dept. Medicine, SQU; Dr. Hamdan Al-Habsi, Dr. Vrun-da Pimpalkhute, Dept. Family Medicine & Public Health; Mr. Ismail Al-Hasani, student, COM&HS Student, SQU.

The relationship between morphology of segment elevation (STE) of acute myocardial infarction (MI) and coronary angiogram findings

Investigator: Dr. Hatem Farhan, Dept. Medicine, SQU.

Overview of status epilepticus in the Intensive Care Unit (ICU) at SQUH

Investigator: Dr. Mujahid Al-Busaidi, Dept. Medicine, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


27. Iqbal MP, Burney IA. Low doses of colony-stimulating factors lead to resolution of neutropenia in cancer patients through increased levels of dihydrofolate reductase. Pak J Pharm Sci 2014; 27:245–8.
31. Al Kalbani M, Burney IA. The epidemics of obesity and


CONFERENCE & SEMINAR PRESENTATIONS

Poster Presentations

International


National


3. Elshafie O, Woodhouse N, Al Mamari A. Primary hyperparathyroidism in SQUH and effect of preoperative vitamin D therapy on circulating PTH levels. Oman Medical Specialty Board, Department of Medicine Research Day, Muscat, Oman, 5 Nov 2014.

**THESIS SUPERVISION**

**Student Name:** Buthaina Al-Dhali

**Qualification:** M.D.

**Title:** Apoptosis induction in cancer cells by marine soft coral extracts

**Supervisor:** Dr. Ikram Burney

**Date of completion:** Sep 2014

**Student Name:** Najat Al-Harthi

**Qualification:** M.D.

**Title:** Primary hyperparathyroidism in SQUH and effect of preoperative vitamin D therapy on circulating parathyroid hormone (PTH) levels

**Supervisor:** Dr. Omayma El-Shafie

**Date of completion:** On-going

**Student Name:** Muadh Al-Zeedi and Nafaa Al-Kindy

**Qualification:** M.D.

**Title:** Investigation of the cause of raised serum chromogranin-A levels in various lung disorders

**Supervisor:** Dr. Omayma El-Shafie

**Date of completion:** On-going

**Student Name:** Shabib Al-Asmi

**Qualification:** M.D.

**Title:** Indication, complication and long-term outcome of percutaneous endoscopic gastrostomy (PEG) tube insertion: Single tertiary hospital experience

**Supervisor:** Dr. Issa Al-Qarshoubi

**Date of completion:** On-going

**Student Name:** Soud Al-Hajri

**Qualification:** M.D.

**Title:** Outcome of the initiation of screening ultrasonography for hepatocellular carcinoma in viral hepatitis associated chronic liver disease

**Supervisor:** Dr. Issa Al-Qarshoubi

**Date of completion:** On-going

**Student Name:** Zakariya Al-Naamani

**Qualification:** M.D.

**Title:** Clinical presentation and outcome of patients presenting with first onset of portal vein thrombosis

**Supervisor:** Dr. Issa Al-Qarshoubi

**Date of completion:** On-going
The Department of Microbiology & Immunology continues to play an important role in teaching, research and community service. It contributes to the M.D., B.Sc. Biomedical Sciences and B.Sc. Nursing undergraduate programmes. The Department also offers a two-year Master’s programme in Biomedical Sciences (Medical Microbiology) as well as four-year research-based Ph.D. programmes in Bacteriology, Virology, Parasitology and Immunology. It also contributes to the Oman Medical Specialty Board (OMSB) residents’ teaching and training programmes.

The Department’s research interests in microbiology include molecular virology and bacteriology; emerging, vector-borne and zoonotic diseases; as well as the epidemiology of parasitic infections. 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 offers diagnostic services to Sultan Qaboos University Hospital (SQUH) and other hospitals in Oman in the fields of bacteriology, virology, parasitology, mycology and immunology.
Staff

Head of Department
Norbert Nowotny, Professor

Assistant Head of Department
Zakariya Al-Muharrmi, Senior Consultant

Faculty
Ali Al-Jabri, Professor
Mohammed Idris, Professor
Sharanjit Thukral, Professor
Muhammad Al-Kobaish, Assistant Professor
Basil Nzeako, Assistant Professor
Crystal Koh, Assistant Professor
Elias Said, Assistant Professor
Ziaa Al-Hassan, Assistant Professor
Zaaima Al-Jabri, Clinical Instructor
Mohammed Al-Balushi, Research Associate
Khaloud Al-Rahbi, Senior Biomedical Scientist
Khazina Al-Harthy, Senior Biomedical Scientist
Zamzam Al-Bimani, Senior Biomedical Scientist
Situskeara Rajapakse, Senior Biomedical Scientist
Juma Al-Busaidi, Senior Biomedical Scientist
Amal Al-Hinai, Biomedical Scientist
Abd Al-Bimani, Biomedical Scientist

Hospital Staff
Abd Al-Rafay, Senior Consultant
Khuloud Al-Ma'mari, Consultant
Badriya K. Al-Adawi, Consultant
Fatma S. H. B'alawi, Consultant
Jalila S. R. Al-Shukaily, Consultant
Munira Al-Siddiqui, Senior Registrar
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
Sabas A. Khan, Senior Biomedical Scientist
Fatihia Al-Maskery, Senior Biomedical Scientist
Nasra Al-Harrawi, Senior Biomedical Scientist
Ruwayda Al-Lamki, Senior Biomedical Scientist
Anna Al-Balushi, Senior Biomedical Scientist
Sada Al-Harthy, Senior Biomedical Scientist
Sumayya Al-Hosni, Senior Biomedical Scientist
Jen-Mar Mercado, Senior Biomedical Scientist
Ibrahim Kutty, Biomedical Scientist
Faiza Al-Naamani, Biomedical Scientist
Kiran Ali, Biomedical Scientist
Sahim Al-Ghaffar, Biomedical Scientist
Issa Al-Samsami, Biomedical Scientist
Manawar Al-Quraini, Biomedical Scientist
Faiza Al-Mujaizi, Biomedical Scientist
Marwa Al-Hinai, Biomedical Scientist
Jawahar Al-Hinai, Biomedical Scientist
Ishraw A. Al-Kindi, Biomedical Scientist
Huda Al-Ghaffar, Biomedical Scientist
Saad Al-Ubaidan, Biomedical Scientist
Ruqayya K. Al-Harrawi, Biomedical Scientist
Hafsia S. R. Al-Omar, Biomedical Scientist
Azza S. B. Al-Kiadh, Biomedical Scientist
Safa H. S. Al-Asmi, Biomedical Scientist
Najah M. Al-Lawati, Biomedical Scientist

Support Staff
Zia-ul Q. Al-Qureshi, Coordinator, College
Mohammed Al-Wahaibi, Clerk, Hospital
Yousuf Al-Sabty, Coordinator, Hospital

Highlights of the Year 2014

In 2014, the Department of Microbiology & Immunology celebrated the completion and successful defence of the first Ph.D. thesis entitled “Genetic variation and diversity of the CCR5 gene and its relation to HIV/AIDS”, which was carried out in the Department. Despite a slight decline in the number of staff, the number of research grants/projects, scientific publications and specimens investigated in the diagnostic laboratory increased. Together with handling a significant teaching load, this was only possible due to great efforts of all departmental staff, whom are to be congratulated for all their efforts. Unfortunately, a senior member of the Department, Dr. Basil Nzeako, retired in 2014 after 15 years of service; during his time, he impacted many students in the Medical Laboratory Science programme and contributed significantly to the Department. Dr. Nzeako’s departure was a sad occasion for the Department and all members take this opportunity to express their gratitude for his years of excellent service.

Teaching Programmes

Undergraduate Programmes

The Department of Microbiology & Immunology was involved in the training of a large number of undergraduate M.D. and B.Sc. Biomedical Sciences (BMS) as well as B.Sc. Nursing students and international students on exchange research programmes.

M.D. Curriculum

The Department continued to contribute and play a vital role in the M.D. curriculum that was initially implemented in the 2008–2009 academic year. The Department participated in 13 different core and system courses as well as supervising medical student research projects in Phase I and II of the M.D. curriculum. In addition, the Department contributed to teaching laboratory medicine in junior clerkship and senior clerkship in Phase III.
As in the previous years, the Department also contributed substantially to the B.Sc. BMS programme. Seven different courses were offered during 2014. Five students completed their undergraduate student research projects under the supervision of departmental staff.

**B.Sc. Nursing Programme**

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

**POSTGRADUATE PROGRAMMES**

The Department participated in the training of OMSB residents.

**M.Sc. Programme**

The Department continued to offer the Medical Microbiology programme for M.Sc. students in 2014. Four courses were taught in the M.Sc. programme.

**Ph.D. Programme**

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

**Clinical & Diagnostic Services**

The Department’s Microbiology & Immunology Diagnostic Laboratory, based in SQUH, continued to offer diagnostic services primarily to SQUH, but also to other governmental and private hospitals. The expansion in the diagnostic services provided by the laboratory paralleled the increased patient intake and outpatient activity of SQUH. In order to improve patient services, new tests were implemented and the total number of performed tests continued to increase in 2014. Figure 1 shows the activity of the Diagnostic Laboratory over the past 10 years.

**EXTERNAL QUALITY ASSURANCE**

The Department continued to participate in the Royal College of Pathology of Australia External Quality Assurance programme. In addition, it participated in the Middle East respiratory syndrome coronavirus quantitative reverse transcription polymerase chain reaction external quality assurance programme organised by the European Network for Diagnostics of Imported Viral Diseases. The Microbiology & Immunology Diagnostic Laboratory scored very well in these international external quality assurance activities.

**Research**

**RESEARCH PROJECTS**

**EuroWestNile: European West Nile virus research and development collaborative initiative**

| Investigators: Prof. Norbert Nowotny, Dept. Microbiology & Immunology, SQU; large European consortium. |

**EDENext: Biology and control of vector-borne infections in Europe**

| Investigators: Prof. Norbert Nowotny, Dept. Microbiology & Immunology, SQU; large European consortium. |

**Ecology and evolution of interactions between human-adapted and rodent-adapted Schistosoma mansoni in Dhofar, Oman**

| Investigators: Dr. H. Mone, Dr. G. Mouahid, Dr. J. F. Allienne, Dr. J. Boissier, Dr. C. Grunau, Dr. J. Langard, Centre of Biology & Ecology, University of Perpignan, France; Prof. |
Mohamed Idris, Dr. Sidqi Hassan, Dept. Microbiology & Immunology, SQU; Dr. Salim Habbash, Mr. Salim Khashoo, Mr. S. Al-Yafee, MOH, Dhofar, Oman.

AIDS in Oman: Genetic determinants of patients' different responses to HAART: insight into CCL3L1/CCR5 genotype and HLA antigens


Investigators: Prof. Ali Al-Jabri, Dr. Sidqi Hassan, Dr. Mohammed Al-Balushi, Dr. Crystal Koh, Dr. Zakariya Al-Muharrmi, Dept. Microbiology & Immunology, SQU; Dr. Abdullah Balkhair, Dept. Medicine, SQU; Dr. Hamed Al-Ryami, Dept. Genetics, SQU.

The causation of autoimmune inflammatory arthritis and other autoimmune diseases by cellular stress


Investigators: Dr. Mohammed Al-Balushi, Dr. Sidqi Hassan, Prof. Ali Al-Jabri, Prof. Mohamed Idris, Dr. Crystal Koh, Dr. Elias Said, Dept. Microbiology & Immunology, SQU; Dr. Al-Shirawi, Dept. Medicine, SQU.

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. Sidqi Hassan, Dr. Mohammed Al-Balushi, Dr. Crystal Koh, Dept. Microbiology & Immunology, SQU; Dr. Al-Shirawi, Dept. Medicine, SQU.

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


Investigators: Dr. Mohammed Al-Balushi, Prof. Ali Al-Jabri, Dr. Sidqi Hassan, Dr. Elias Said, Dr. Crystal Koh, Dept. Microbiology & Immunology, SQU; Dr. Moza Al-Kalbani, Dr. Thuria Al-Rawahi, Dept. Obstetrics & Gynaecology, SQU; Dr. Aisha Al-Hamdani, Dr. Fatma Ramadhan, Dept. Pathology, SQU.

Identification and characterization of carbapenemases in clinical isolates of Pseudomonas aeruginosa, Escherichia coli and Klebsiella pneumoniae at Sultan Qaboos University Hospital


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

The causation of autoimmune inflammatory arthritis and other autoimmune diseases by cellular stress


Investigator: Dr. Mohammed Al-Balushi, Dept. Microbiology & Immunology, SQU.

The prevalence of human papilloma virus (HPV) among Omani women attending Sultan Qaboos University Hospital and the Royal Hospital Gynecology Clinics


Investigator: Dr. Badriya Al-Adawi, Dept. Microbiology & Immunology, SQU.

Detection and characterization of carbapenem-resistant enterobacteriaceae (CRE) in clinical isolates from Oman


Investigator: Dr. Zakariya Al-Muharrmi, Dept. Microbiology & Immunology, SQU.

Mecillinam sensitivity in Escherichia coli urinary isolates in SQUH


Investigator: Dr. Badriya Al-Adawi, Dept. Microbiology & Immunology, SQU.

Fosfomycin sensitivity in E. coli isolated from urine in SQUH


Investigator: Dr. Badriya Al-Adawi, Dept. Microbiology & Immunology, SQU.

Genetic characterization of influenza (H1N1) pandemic 2009 viruses, Oman 2009–2013

Investigators: Prof. Norbert Nowotny, Dr. Zakariya Al-Muharrmi, Dr. Khuloud Al-Ma’mari, Dr. Fatma S. H. Ba’Alawi, Dept. Microbiology & Immunology, SQU.

Helper T cell (TH)-17 and regulatory R cell (Treg) subset profiles in Omani patients with systemic lupus erythematosus (SLE): A pilot study


Investigator: Dr. Crystal Koh, Dept. Microbiology & Immunology, SQU.

Brucellosis in Oman: Clinical manifestations, laboratory results, treatment and outcome


Investigator: Dr. Zakariya Al-Muharrmi, Dept. Microbiology & Immunology, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications

18. Kolodziejek J, Marinov M, Kiss BJ, Alexe V, Nowotny N. The complete sequence of a West Nile virus lineage 2 strain detected in a Hyalomma marginatum margina-


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

International


Poster Presentations

International


Asia Pacific Congress of Clinical Microbiology & Infection (APCCMI), Kuala Lumpur, Malaysia, 26–29 Nov 2014.


National

1. Al-Kobaisi MF, Al-Adhoubi M, Al-Mahrami Z, Nowotny N. Prevalence of human enteric viruses at Sultan Qaboos University Hospital. SQU University Day, Muscat, Oman, May 2014.

Seminar Presentations

International


THESIS SUPERVISION

Student Name: Samira Al-Mahrooqi
Qualification: Ph.D. Medical Microbiology
Title: Genetic determinants of AIDS patients’ variable response to HAART: Insight into CCR5 genotypes
Supervisor: Prof. Ali Al-Jabri
Date of completion: Jan 2014

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 Idris
Date of completion: Dec 2014

Student Name: Salama S. Al-Hamidi
Qualification: Ph.D.
Title: Population genetic structure of Theileria annulata and T. lestoquardi in Oman
Supervisors: Dr. Hamza Babiker and Prof. Mohamed Idris
Date of completion: On-going

Student Name: Ahmed O. Al-Jassasi
Qualification: Ph.D.
Title: Dynamics of Theileria parasites in asymptomatic livestock in Oman
Supervisors: Prof. Mohamed Idris, Dr. Hamza Babiker and Prof. Eugene Johnson
Date of completion: On-going

Student Name: Somaya Habib
Qualification: Ph.D. Immunology
Title: The role of HLA and CTLA4 in the etiology and pathogenesis of type 1 autoimmune diabetes mellitus among an ethnic Omani population
Supervisors: Prof. Ali Al-Jabri, Dr. Elias Said and Dr. Crystal Koh
Date of completion: On-going

Student Name: Maryam S. Al-Adhoobi
Qualification: M.Sc. Medical Microbiology
Title: Prevalence of human enteric viruses in Oman
Supervisor: Dr. Muhammad Al-Kobaisi
Date of completion: Jun 2014

Student Name: Mawiyah Al-Jabri
Qualification: M.Sc. Medical Microbiology
Title: The influence of TLR9 single nucleotide polymorphisms on systemic lupus erythematosus among Omani population
Supervisor: Dr. Crystal Koh
Date of completion: On-going

Student Name: Sara Al-Sumri
Qualification: M.Sc. Medical Microbiology
Title: Identification of carbapenemases in clinical isolates of Pseudomonas aeruginosa, Escherichia coli and Klebsiella pneumonia at SQUH
Supervisors: Prof. Sharanjit Thukral and Dr. Badriya Al-Adawi
Date of completion: On-going

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

**Supervisor:** Dr. Elias 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 Said and Prof. Ali Al-Jabri  
**Date of completion:** On-going

**Student Name:** Zainab J. A. R. Al-Lawati  
**Qualification:** M.Sc. Medical Microbiology  
**Title:** The prevalence of human papilloma virus among Omani women attending Sultan Qaboos University Hospital and the Royal Hospital Gynecology Clinic  
**Supervisors:** Dr. Muhannad F.M. Al-Kobaisi  
**Date of completion:** On-going
The Nursing Directorate plays a vital role in patient care and workflow activities in Sultan Qaboos University Hospital (SQUH). The Directorate is a pioneer in patient/client care services and has led the way in efforts to improve the healthcare system at SQUH. Nurses are recognised as the driving force for many nursing innovations and medical successes in the delivery of quality healthcare services to individuals, families, and communities. The Nursing Directorate’s workforce is committed to their professional roles and responsibilities. Every individual is seen as a vital resource for the delivery of excellent healthcare.

The number of patients/clients requiring care at SQUH have increased substantially in recent years and these patients often require complex, comprehensive, and advanced nursing care interventions. Despite the increased workload, staff have remained dedicated, committed, and hard-working in their efforts to achieve specific key performance indicators (KPIs) developed by the Nursing Directorate. Nurses at the Directorate are committed and dedicated to patient care and safety as well as to the organisational vision, mission, values, and objectives of SQUH.

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, teamwork, continuous improvement, excellence, innovation, and creativity characterise our values. As a teaching organisation, we are fully committed and involved in the teaching and training of nurses, medical students, allied health professionals, and support staff in order to put our values into practice.
Staff

Deputy Director
Shinoona Al-Harthi

Administration Staff
Aina Al-Riyami, Head of Section, Nursing Affairs
Rahma Al-Mahrizi, Acting Head of Section, Inpatients Area
Norah Ngcamu, Acting Head of Section, Maternal & Child Health
Catherine Lausa, Acting Head of Section, Ambulatory Services
Daniel Birru, Acting Head of Section, Training & Professional Development
Fatma S. Al-Dhabari, Acting Head of Section, Nursing Quality & Special Projects
Huda Al-Awaisi, Acting Head of Section, Nursing Research
Parvi Ponambalam, Nursing Quality & Special Projects
Samira Al-Rasbi, Acting Head of Section, Nurse Specialists & Medical Orderlies
Ruwaitiya Al-Ghassany, In-Charge of Nursing Staff Roster

Head Nurses - Inpatient Departments
Zuweina Al-Shabibi, Orthopaedic/Neurosurgery Ward
Annette Shirto, Cardiothoracic/Cardiology Ward
Yogambal Velayutham, General Medicine Female Ward
Mega M. Nor, General Medicine Male Ward
Koh C. Fong, Haematology/Oncology Female Ward
Sapiah Abbas, Haematology/Oncology Male Ward
Nooraini Yadi, Female Surgical Ward
Zaleha B. B. Zaman, Ophthalmology/ENT Ward
Shirely A. Angsa, Special Nursing Ward
Sulaiman Al-Mahmoodi, General Surgery Ward
Sukhjit Singh, Behavioural Medicine Ward
Zahra Al-Harthi, Bone Marrow Transplant Ward

Head Nurses - Ambulatory Services
Warda Al-Lawati, Cardiac Catheterisation Unit
Aisha Al-Hinai, Day Care Unit
Haseena Saib, Operating Theatre/Recovery Room
Suaad Al-Hassani, Minor Operating Theatre/Endoscopy Room
Shamsa Al-Belushi, Emergency Department
Nasser Al-Kharusi, Outpatient Department
Zuweina Al-Salami, Day/Night Student Clinic
Sarala Kodamala, Family Medicine & Public Health Clinic
Khalid Al-Shruaiqi, Haemodialysis Unit
Judy Mathews, Oral Health Clinic
Brigitte Sam, Blood Bank

Head Nurses - Maternal & Child Health Departments
Barbara Swales, Delivery Unit
Valsa Shelin, Neonatal Intensive/Special Care Units
Suad Al-Bahri, Paediatric Day Care Unit/Paediatric Outpatient Department
Nancy Reyes, Gastroenterology/Neurology/Endocrinology/Metabolic/ENT Paediatric Ward
Umi H. Basri, Neurosurgery/Immunology/Rheumatology/Respiratory/Nephrology/Cardiology/Orthopaedic/Dental

Paediatric Ward
Rosniza B. M. Mahidin, Haematology/Oncology Paediatric Ward
Thavamony Saravanan, Postnatal/Obstetric Ward
Galie Pascua, Gynaecology Ward

Support Staff
Philomena D’Souza, Nursing Specialist
Sumaiya Al-Gharabi, Nursing Specialist
Fatma Al-Kasbi, Nursing Specialist
Ruqaya Al-Harrasi, Nursing Specialist
Zamzam Al-Habsi, Nursing Specialist
Hayah Al-Sharji, Nursing Specialist
Dawood Al-Abri, Nursing Specialist
Suad Al-Mukhaini, Nursing Specialist
Intisar Al-Hadabi, Nursing Specialist
Fatma Al-Mamari, Nursing Specialist
Yusra Al-Ghanamy, Nursing Specialist
Zayanab Al-Azri, Nursing Specialist
Suad Al-Mukhaini, Nursing Specialist
Widad Al-Zakwani, Nursing Specialist
Afra Al-Habsi, Coordinator
Fatiya Al-Tobi, Coordinator
Naema Al-Breiki, Coordinator
Zahra Al-Zedjali, Coordinator
Hilal Al-Zedjali, Messenger
Ali M. Al-Hosni, Receptionist (Inpatients)
Sulaiman H. N. Al-Hussaini, Receptionist (Inpatients)
Naseer S. Al-Rashdi, Clerk (Inpatients)
Yousuf Y. M. Al-Blushi, Receptionist (Inpatients)
Shamsa K. H. Al-Rawahi, Clerk (Inpatients)
Zainab S. K. Al-Bulushi, Clerk (Inpatients)
Fathiya S. J. Al-Zedjali, Clerk (Inpatients)
Alia A. S. Al-Hatali, Clerk (Inpatients)
Nabila S. Al-Khalili, Ward Clerk (Inpatients)
Zakiya M. A. Al-Maharbi, Receptionist (Inpatients)
Maryam S. K. Al-Amri, Clerk (Inpatients)
Issa S. Al-Mabsali, Clerk (Inpatients)
Khalida F. K. Al-Raisi, Clerk (Inpatients)
Safiya R. Al-Julandani, Receptionist (Inpatients)
Badriya S. G. Al-Ghazi, Clerk (Inpatients)
Yousuf K. Al-Balushi, Receptionist (Inpatients)
Zahra H. Al-Hilali, Receptionist (Inpatients)
Sanna M. H. Al-Yarubi, Ward Clerk (Inpatients)
Salim R. M. Al-Naimi, Transit Lounge (Inpatients)
Nasser M. N. Al-Naamani, Transit Lounge (Inpatients)
Zainab M. Al-Hajri, Transit Lounge (Inpatients)
Tahiya S. Al-Burtomani, Transit Lounge (Inpatients)
Sumiah A. Al-Zidi, Transit Lounge (Inpatients)

Highlights of the Year 2014

ACREDITATION

One of the most important highlights of 2014 was the Directorate’s continued focus on challenging ourselves to achieve higher standards. This was exemplified by the Di-
Events and Activities

Events and activities organised by the Directorate in 2014 were aimed at team-building, professional development and fostering the employee motivation and engagement that is vital to work productivity.

A total of 210 nurses from various wards and units attended a social event for all nurses held on 28 March 2014 at the Oman Aviation Club. Participation in these celebrations motivated team spirit in the Directorate. The Nursing Services Directorate team organised the Nursing Open Day on 17 April 2014 at SQUH. A total of 300 nurses and other employees from various wards/units participated. The International Nurses Day in May was marked by the Meet and Greet Event, during which Ms. Shinoona Al-Harthy, Deputy Director, met head nurses and exchanged greetings with the nursing teams at SQUH. The Directorate organised a Food Fair to motivate nursing staff and build team spirit. This was followed by a celebration of the achievements of 11 nurses who were recognised as distinguished nurses of the year during this year’s University Day.

Ms. Shinoona and Ms. Samira Al-Rasbi, along with members of the SQUH Director-General team, visited various hospitals in India, Malaysia and the Philippines between 24 August and 4 September in order to assess the standards of international hospitals as a benchmark.

A workshop on nursing for critically ill patients was co-organised by the Directorates of Nursing Services and Training & Continuing Professional Development (CPD) for nurses at SQUH. Two representatives from Hull University in the UK conducted the workshop.

The Nursing Services Directorate began a journal club to discuss current trends in nursing practice. The first journal club presentation by a nursing research group was entitled “The golden hour: Care of LBW infants during the first hour of life”, was held. The Nursing Newsletter is published annually and 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.

Continuous Quality Improvement Activities

Audits and surveys are a pillar for quality improvement and these are performed at regular intervals during the year. Results are shared at a nursing management meeting with all middle managers for continuous quality improvement.

During the year, a 360° reverse opinionnaire audit was conducted to assess the performance of head nurses by their ward/unit nursing staff. The outcome of this audit helped the Nursing Services Directorate to take necessary corrective and preventive steps to improve the management skills of nursing leaders.

Teaching Programmes

Nurses from the Directorate contributed to various professional examinations at SQUH in 2014, including: the College of Nursing exit examinations as well as M.D. degree final examinations, UK Membership of the Royal Colleges of Physicians examinations and end of rotation examinations for the College of Medicine & Health Sciences.

Internship Programme

The responsibility for internships is held jointly by internship coordinators from the College of Nursing and the Directorate of Nursing at SQUH. The internship coordinator from the Directorate plans a 26-week internship rotation in different clinical areas of SQUH based on the requirements of the College of Nursing. The internship is approved by both the Deputy Director of Finance & Administration and the Deputy Director of Nursing. Preceptors in selected clinical areas are assigned to interns during their intern-

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Table 1: Directorate of Nursing Services events and activities in 2014

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Day Out</td>
<td>28 March 2014</td>
</tr>
<tr>
<td>Nursing Open Day</td>
<td>17 April 2014</td>
</tr>
<tr>
<td>International Vaccination Week</td>
<td>28 April 2014</td>
</tr>
<tr>
<td>International Nurses Day</td>
<td>16 May 2014</td>
</tr>
<tr>
<td>Diabetes Open Day</td>
<td>18 November 2014</td>
</tr>
<tr>
<td>Farewell Breakfast</td>
<td>22 November 2014</td>
</tr>
<tr>
<td>Food Fair</td>
<td>4 December 2014</td>
</tr>
</tbody>
</table>

Table 2: Directorate of Nursing Services audits in 2014

<table>
<thead>
<tr>
<th>Month</th>
<th>Audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan to Jul</td>
<td>Call Bell</td>
</tr>
<tr>
<td>Feb to Aug</td>
<td>Identification Band</td>
</tr>
<tr>
<td>Mar to Sep</td>
<td>Documentation</td>
</tr>
<tr>
<td>Apr to Oct</td>
<td>Patient and Family Education</td>
</tr>
<tr>
<td>Jun to Dec</td>
<td>Fire</td>
</tr>
<tr>
<td>Aug</td>
<td>Reverse Opinionnaire</td>
</tr>
<tr>
<td>Oct</td>
<td>Inpatient Satisfaction with Nursing Courtesy</td>
</tr>
<tr>
<td>Oct</td>
<td>Inpatient Perception with Safety</td>
</tr>
<tr>
<td>Nov</td>
<td>Unit Best Practice</td>
</tr>
<tr>
<td>Dec</td>
<td>Nurses Satisfaction Survey</td>
</tr>
</tbody>
</table>
ship to supervise and guide their clinical practice. At the end of their internship rotation, the intern is assessed by their preceptor and a competency log book filled in for certification. During their 26-week internship, the College of Nursing organises a 1–2-month internship abroad. A total of 63 interns from the College of Nursing have completed their 26-week internship at SQUH in 2014.

### Training Courses & CNE Activities

The Directorate of Nursing Services was involved in planning, organising and conducting training and staff development activities for nursing staff and students in collaboration with the Directorate of Training & CPD, the College of Nursing and other nursing institutions within and outside Oman during the year 2014.

### Clinical & Diagnostic Services

Transit Lounge services were officially launched in the 3 Red and 2 Yellow Wards in order to facilitate the discharge of inpatients and ensure effective patient flow management to meet the increased demand for beds. Circumcision services were initiated in 2 Red Ward so as to provide optimum care to male newborns and reduce the workload in the Day Care Unit and Minor Operating Theatre.

During the year, an initiative to orient all head nurses with the role of coordinator was implemented to help cover the duties of nursing coordinators during staff shortages.

### INTENSIVE CARE AND HIGH DEPENDENCY UNITS

The Intensive Care and High Dependency Units are consistently utilised for critical and high acuity patients and

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**Table 3: Continuous Nursing Education presentations in 2014**

<table>
<thead>
<tr>
<th>Title</th>
<th>Speaker</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PortaCath Experience at SQUH</td>
<td>Philomena D’Souza</td>
<td>7 Jan 2014</td>
</tr>
<tr>
<td>Nursing Role in Diabetes Management</td>
<td>Sumaiya Al-Gharabi</td>
<td>11 Feb 2014</td>
</tr>
<tr>
<td>Chronic Pain Management</td>
<td>Fatma Al-Kasbi</td>
<td>11 Mar 2014</td>
</tr>
<tr>
<td>Diet in post Tonsillectomy bleeding</td>
<td>Ruqaya Al-Harrasi</td>
<td>8 Apr 2014</td>
</tr>
<tr>
<td>Breast Cancer Awareness in Omani Woman</td>
<td>Zamzam Al-Habsi</td>
<td>13 May 2014</td>
</tr>
<tr>
<td>Paediatric Gastro Hepatology Nursing Care</td>
<td>Hayah Al-Sharji</td>
<td>10 Jun 2014</td>
</tr>
<tr>
<td>Nursing Care of Nephrology Patients</td>
<td>Dawood Al-Abri</td>
<td>8 Jul 2014</td>
</tr>
<tr>
<td>Hypercholesterma</td>
<td>Suad Al-Mukhaini</td>
<td>12 Aug 2014</td>
</tr>
<tr>
<td>Prader Willi Syndrome</td>
<td>Intisaar Al-Hadabi</td>
<td>9 Sep 2014</td>
</tr>
<tr>
<td>Management of Diabetic Foot</td>
<td>Fatma Al-Mamari</td>
<td>14 Oct 2014</td>
</tr>
<tr>
<td>Electro Retino Gram</td>
<td>Yusra Al-Ghanamy</td>
<td>11 Nov 2014</td>
</tr>
<tr>
<td>Urinary Incontinence in Women</td>
<td>Zayanab Al-Azri</td>
<td>9 Dec 2014</td>
</tr>
</tbody>
</table>

---

**Table 4: Patient statistics in nursing departments in 2014**

<table>
<thead>
<tr>
<th>Patient/procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient admissions/transfers</td>
<td>33,522</td>
</tr>
<tr>
<td>Outpatients</td>
<td>139,034</td>
</tr>
<tr>
<td>Emergency Department patients</td>
<td>63,975</td>
</tr>
<tr>
<td>Day Care Unit patients</td>
<td>10,959</td>
</tr>
<tr>
<td>Paediatric Day Care Unit patients</td>
<td>3,985</td>
</tr>
<tr>
<td>Deliveries</td>
<td>4,572</td>
</tr>
<tr>
<td>Surgeries</td>
<td>9,953</td>
</tr>
</tbody>
</table>

---

**Figure 1: Course attendance among nurses in 2014.**
available nursing time is matched to patient load where possible. Strategies are in place to expand the service and manpower will be increased accordingly.

**Key Performance Indicators**

A KPI is one type of performance measurement tool used to

---

**Figure 2:** Mandatory course attendance among nurses in 2014.

**Figure 3:** Staff clinical attachments in 2014.

SQU = Sultan Qaboos University; ONI = Oman Nursing Institute; AFH = Armed Forces Hospital.

**Figure 4:** Number of student clinical attachments by institution among nurses in 2014.

SQU = Sultan Qaboos University; ONI = Oman Nursing Institute; OSNI = Oman Specialized Nursing Institute; DT&CPD = Directorate of Training & Continuing Professional Development; CSSD = Central Sterile Supply Department.
evaluate the success of a particular activity for further quality improvement. The Nursing Services Directorate KPIs are focused on nurse-sensitive indicators which reflect the structure, process and outcome of nursing care which are measured and monitored on a monthly basis and evaluated and analysed bi-annually.

**Patient falls**

Patient falls remained a challenge as data indicated that the rate of patient falls increased from 0.23 to 0.34 in the second half of 2014. Strategies to combat this, including universal fall precautions, patient education leaflets and educational sessions on fall prevention, are actively being pursued.

**Pressure ulcers**

A pressure ulcer prevention programme was instituted in 2014 and prevention campaigns are in place. Results showed that the rate of pressure ulcers in the second half of the year had decreased by 0.06.

![Figure 5](image1.png) **Figure 5**: Intensive Care and High Dependency Units patient load hours in comparison to available nursing hours per year from 2012 to 2014.

![Figure 6](image2.png) **Figure 6**: Comparison of the patient fall and fall injury rates in each half of 2014.

![Figure 7](image3.png) **Figure 7**: Comparison of the prevalence and incidence of pressure ulcers among patients in each half of 2014.

![Figure 8](image4.png) **Figure 8**: Comparison of the percentage of patients who developed extravasation in each half of 2014.
Extravasation
The monitoring of extravasation among patients receiving chemotherapy was started in 2014 and results in the second half of the year showed a reduction of 0.2%.

Nurse Satisfaction
A survey on the level of satisfaction among nurses is performed annually. Results showed an improvement in satisfaction level for 2014 in comparison to 2013.

Nurse Absenteeism
In 2014, sick leave day usage remained below 10% while the sickness absenteeism rate stayed below 2%.

Incident Reports
In 2014, a total of 70 incidents were reported. Approximately 54% of the incidents were related to patient falls. Out of 38 patient falls, 18 had sustained an injury. New structures to prevent further falls have been implemented. Communication was the next highest specific incident category with a total of eight cases. This category includes incidents to do with miscommunication between nurses, doctors and other individuals. Incidents are addressed promptly with corrective actions to prevent recurrence.

Research

Research Publications & Books
Journal Publications
Annual Report 2014

29:437–44.


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

International


National


Poster Presentation

International

1. Al-Zakwani W. Key performance indicator: Readmission within 28 days following discharge from inpatient psychiatric unit. 20th International Network for Psychiatric Nursing Research, Coventry, UK, 18–19 Sep 2014.

Seminar Presentation

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 patients, whereas paediatric clinics include preterm, haematology, metabolic, neurology, respiratory, general, endocrine and nephrology patients. 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 promotion, 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 leftover food 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
Shadya Al-Harthy, Senior Dietician

Deputy Head of Department
Majda Al-Maamary

Nutrition & Dietetics Staff
Salah Al-Shukaili, Senior Dietician (on study leave)
A'Shaima Al-Kindi, Senior Dietician
Ayda Al-Nabhani, Senior Dietician
Fatma Al-Hashmi, Dietician
Salma Al-Mahrouqi, Dietician (on study leave)
Halima Al-Siyabi, Dietician
Amal H. Al-Adawi, Dietician
Hanan Al-Alawi, Dietician
Abeer Al-Saidi, Dietician

Catering Administration Staff
Razeen Hameed, Catering Administration Superintendent
Matar R. Al-Ruqaishi, Catering Supervisor
Thuraya Al-Abadi, Assistant Catering Supervisor

Support Staff
Ali Al-Farai, Coordinator

Highlights of the Year 2014

The use of Departmental key performance indicators was continued in 2014. There was further improvement of the general catering services in 2014. The number of complaints was lower than in 2013. Weekly food safety meetings were conducted to ensure that food is prepared and delivered hygienically. Patient meal recipes were updated to focus on meals prepared specifically for the Sultan Qaboos University Hospital (SQUH) catering operation and based on special patient meal menus.

In the clinical section, the Department developed a mechanism to update all educational materials used to educate patients during consultations. This is expected to be finalised by September 2015.

The Department presented a talk on the dietary treatment of phenylketonuria (PKU) for medical staff at the PKU Awareness Day in Musandam. This event was co-organised by the Ministry of Health and SQUH. In addition, the Department participated and produced a poster and related educational materials for Rare Disease Day.

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.

Teaching Programmes

Teaching was provided for 5th year medical students in the area of nutrition for geriatrics.

Training Courses & CME Activities

The Department delivered nutrition and dietetics training programmes for nutrition students from the Department of Food Sciences & Nutrition at the College of Agricultural & Marine Sciences. An in-service training programme was provided to ensure the on-going training for diet clerks and other catering company staff; this had the aim of upgrading and enhancing their knowledge to ensure better patient care.

Additionally, the Department coordinated and participated in the Baby & Infant Friendly Hospital Initiative Course at SQUH in 2014.

Research

Conference Presentations

National
6. **Al-Saidi A.** Healthy diet for thalassemia patients. World Thalassemia Day, Oman Society for Hematology, Sultan Qaboos University Hospital, Muscat, Oman, 24 May 2014.

Poster Presentations

International

National
1. **Al-Nabhani A.** Food guide pyramid for amino acid metabolism disorders. Rare Disease Day, Al Bahja Mall, Muscat, Oman, 27 Feb 2014.
The Department of Obstetrics & Gynaecology is one of the major departments in the College of Medicine & Health Sciences (COM&HS) 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 care for 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 like urogynaecology, 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 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.
Annual Report 2014

Staff

**Head of Department**
Adel Abu-Heija, *Professor*

**Faculty**
Vaidyanathan Gowri, *Associate Professor*
Maha Al-Khaduri, *Associate Professor*
Lamya Al-Kharusi, *Senior Consultant*
Mariam Mathew, *Senior Consultant*
Lovina Machado, *Senior Consultant*
Wadha Al-Ghafri, *Senior Consultant*
Tamima Al-Dughaishi, *Senior Consultant*
Nihal Al-Riyami, *Senior Consultant*
Mariam Al-Shukri, *Senior Consultant*
Lamya Al-Kharusi, *Senior Consultant*
Moza Al-Kalbani, *Senior Consultant*
Rahma Al-Haddabi, *Consultant*
Shahila Sheik, *Senior Specialist*
Durdana Khan, *Senior Specialist*
Aneeta Bai, *Senior Specialist*
Silja A. Pillai, *Senior Specialist*
Girija Shivaruadraiah, *Senior Specialist*
Manjunatha Attibele, *Senior Specialist*
Majeda R. Al-Bash, *Senior Specialist*
Hana Al-Sayed, *Specialist-A*
Asha Nair, *Specialist-A*
Jai K. Perchani, *Specialist-A*
Saba Mubbashir, *Specialist-A*
Sunita Kumari, *Specialist-A*
Seema Zulfikar, *Specialist-A*
Sarya A. Bella, *Specialist*
Farah Fathih, *Specialist*
Aysha Salahuddin, *Senior Medical Officer*
Mayesa T. Al-Din, *Senior Medical Officer*
Sara O. A. Zaid, *Senior Medical Officer*
Nooren Ishrat, *Senior Medical Officer*
Diya E. Omer, *Senior Medical Officer*
Suhaila Al-Wahaibi, *Senior Medical Officer*
Shahnaz B. Putul, *Senior Medical Officer*
Salma M. A. Elakhdari, *Senior Medical Officer*
Rania I. H. Mohammed, *Senior Medical Officer*
Widad A. A. Abdullah, *Clinical Attaché*

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

Highlights of the Year 2014

**Workshops**
The Department organised an ultrasound workshop under the supervision of Dr. Mariam Al-Shukri, Dr. Tamima Al-Dughaishi and Dr. Lovina Machado. The workshop was held from 21–24 April 2014.

**Achievement and Awards**
Dr. Tamima, Dr. Silja Pillai and Dr. Ayesh Salahuddin won the award for “Best Staff” in the Department. Dr. Lamya Al-Kharusi was awarded the “Best Doctor at SQUH” award on University Day on 5 May 2014.

**Teaching Programmes**

**Undergraduate Programmes**

**Pre-clerkship Programme**
There are about 120 students in the Preclerkship phase. They are taught weekly for nine weeks on such topics as common symptoms during antenatal history-taking, as well as demonstrations on manikins; a review of reproductive anatomy; common symptoms and signs in obstetrics and gynaecology, such as menstrual dysfunction, infertility, menopause and 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.

**Senior Clerkship Programme**
Their clerkship lasted 13 weeks: eight weeks in Obstetrics & Gynaecology, three weeks in Child Health and two weeks in laboratories. The first two weeks of the Obstetrics & Gynaecology rotation consists of lectures and posting in the skills laboratory/simulation centre. After that they rotate for six weeks at four different sites, SQUH, Royal Hospital, Khoul Hospital and the Armed Forces 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 for the whole senior clerkship rotation.

**Postgraduate Programme**

**Residency Programme**
Residents from the Oman Medical Specialty Board rotate in the Department. Both junior (years 1–3) 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, while Dr. Nihal Al-Riyami is the Programme Director. Eight faculty from the Department are members of the Obstetrics & Gynaecology Scientific Committee and they are also members of

Prof. Osama Shawki was invited by the Department to conduct a workshop on hysteroscopy at SQUH on 25 May 2014.
various subcommittees.

**International Students**

There were 13 clinical attachés from Oman and other countries, including New Zealand, the USA, Germany, Brazil, Taiwan, Czech Republic and Poland. These clinical attachés rotated in the Department during 2014.

**Training Courses & CME Activities**

The Department has a daily morning meeting that includes discussion of the emergencies of the previous day, handovers 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 resident 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**

**OUTPATIENT SERVICES**

There are daily outpatient clinics dealing with general obstetrical and gynaecological patients as well as the following subspecialty clinics: Infertility, Maternal Fetal Medicine, Gynae-oncology, Urogynaecology, Diabetes, Recurrent Abortion and Intrauterine Growth Restriction Clinics.

In 2014, the following number of procedures were performed: abdominal and vaginal ultrasound scans (5,071); Mirena®/intrauterine device insertions (59); intrauterine contraceptive device insertions (7); intrauterine insemination (74); phlebotomies (13,617); hydrosonography (36); endometrial biopsies (123); fetal non-stress tests (2,238); bladder scans (61); uroflowmetry tests (86); large loop excision of the transformation zone procedures (2); colposcopies (12); amniocentesis procedures (13); vaginal paint-

Table 1: Obstetrics & Gynaecology Outpatient Department patient statistics in 2014

<table>
<thead>
<tr>
<th>No. of patients</th>
<th>Patient category</th>
</tr>
</thead>
<tbody>
<tr>
<td>18,399</td>
<td>General</td>
</tr>
<tr>
<td>10,374</td>
<td>Antenatal</td>
</tr>
<tr>
<td>5,983</td>
<td>Gynaecological</td>
</tr>
<tr>
<td>90</td>
<td>Postnatal</td>
</tr>
<tr>
<td>1,699</td>
<td>Infertility Clinic</td>
</tr>
<tr>
<td>656</td>
<td>Diabetics Clinic</td>
</tr>
<tr>
<td>377</td>
<td>Urogynaecology Clinic</td>
</tr>
<tr>
<td>59</td>
<td>Colposcopy Clinic</td>
</tr>
<tr>
<td>109</td>
<td>Intra Uterine Growth Restriction Clinic</td>
</tr>
<tr>
<td>483</td>
<td>Maternal Fetal Medicine Clinic</td>
</tr>
<tr>
<td>17</td>
<td>Amniocentesis Clinic</td>
</tr>
<tr>
<td>133</td>
<td>Recurrent Abortion Clinic</td>
</tr>
<tr>
<td>180</td>
<td>Oncology</td>
</tr>
<tr>
<td>49</td>
<td>Adolescents</td>
</tr>
<tr>
<td>118</td>
<td>Combined infertility</td>
</tr>
</tbody>
</table>

**INPATIENT SERVICES**

We had a total of 4,052 admissions in the 2 Red Ward (mainly postnatal). Of these, 1,662 patients (41%) who delivered were booked via the Antenatal Clinic and 2,390 (59%) were un-booked cases. In the Labour Ward from January 2014 to December 2014, a total of 5,441 patients were admitted, including 1,267 day cases. There were 3,490 spontaneous vaginal deliveries, 217 elective lower segment Caesarean section deliveries, 642 emergency lower segment Caesarean section deliveries and 146 vacuum-assisted vaginal deliveries.

Table 2: 2 Yellow Ward monthly case statistics in 2014

<table>
<thead>
<tr>
<th>Category</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>Gynaecology</td>
<td>104</td>
<td>102</td>
<td>128</td>
<td>80</td>
<td>72</td>
<td>131</td>
<td>107</td>
<td>100</td>
<td>102</td>
<td>94</td>
<td>94</td>
<td>110</td>
<td>1,224</td>
</tr>
<tr>
<td>Antenatal</td>
<td>105</td>
<td>82</td>
<td>111</td>
<td>74</td>
<td>79</td>
<td>96</td>
<td>115</td>
<td>129</td>
<td>111</td>
<td>100</td>
<td>85</td>
<td>98</td>
<td>1,185</td>
</tr>
<tr>
<td>Postnatal</td>
<td>32</td>
<td>45</td>
<td>63</td>
<td>49</td>
<td>86</td>
<td>64</td>
<td>82</td>
<td>68</td>
<td>57</td>
<td>99</td>
<td>68</td>
<td>85</td>
<td>798</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Bed occupancy in %</td>
<td>90.2</td>
<td>89.1</td>
<td>81.8</td>
<td>60.9</td>
<td>81.5</td>
<td>82.9</td>
<td>77.7</td>
<td>82.7</td>
<td>92.8</td>
<td>83.2</td>
<td>91.4</td>
<td>88.4</td>
<td>-</td>
</tr>
<tr>
<td>Total admissions</td>
<td>244</td>
<td>233</td>
<td>305</td>
<td>205</td>
<td>237</td>
<td>291</td>
<td>306</td>
<td>301</td>
<td>272</td>
<td>295</td>
<td>248</td>
<td>295</td>
<td>3,232</td>
</tr>
</tbody>
</table>
The total number of gynaecology patients admitted in the Yellow Ward in 2014 was 3,232.

Research

Research Projects

Cord blood C-peptide level and neonatal outcome in relation to maternal haemoglobin A1c in last trimester of pregnancy

<table>
<thead>
<tr>
<th>Code: IG/MED/OBGY/14/01</th>
<th>Dates: 2014–2016</th>
<th>Value: 5,000 OR</th>
<th>Funder: SQU</th>
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<tbody>
<tr>
<td>Investigators: Dr. Mariam Mathew, Dr. Majeda Al-Bash, Dept. Obstetrics &amp; Gynaecology, SQU; Dr. Ashfaq A. Khan, Dept. Child Health, SQU; Dr. Clifford Abiaka, Dept. Biochemistry, SQU; Prof. Shyam Ganguly, Dept. Family Medicine &amp; Public Health, SQU.</td>
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Cervical cerclages in Sultan Qaboos University Hospital: A three year review

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<tbody>
<tr>
<td>Investigators: Dr. Durdana Khan, Dr. Ayesha Salabuddin, Dr. Mariam Mathew, Dept. Obstetrics &amp; Gynaecology, SQU; Dr. Syed G. Rizvi, Dept. Family Medicine &amp; Public Health, SQU.</td>
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Symptomatic urinary tract infection in diabetic pregnant women: Effect of the type of diabetes and method of diabetic control

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</thead>
<tbody>
<tr>
<td>Investigator: Dr. Majeda Al-Bash, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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</table>

Major etiological factors of infertility and treatment outcome in infertile couples attending Sultan Qaboos University Hospital, Oman

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<thead>
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</thead>
<tbody>
<tr>
<td>Investigator: Dr. Vaidyanathan Gowri, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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Has external cephalic version reduced the incidence of Caesarian delivery for breech delivery at SQUH?

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<tr>
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</thead>
<tbody>
<tr>
<td>Investigators: Dr. Rahma Al-Haddabi, Dr. Tamima Al-Dughaishi, Dr. Nawal Al-Maamari (resident), Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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Glucose challenge test: Is it a suitable screening test for gestational diabetes mellitus?

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</thead>
<tbody>
<tr>
<td>Investigator: Prof. Adel Abu-Heija, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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</table>

Emergency peripartum hysterectomy at SQUH, Oman

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<tbody>
<tr>
<td>Investigators: Prof. Adel Abu-Heija, Dr. Majeda Al-Bash, Dr. Mayesa Al-Din, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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</table>

Shoulder dystocia: Risk factors and fetal morbidity at SQUH, Oman

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<tbody>
<tr>
<td>Investigators: Dr. Majeda Al-Bash, Prof. Adel Abu-Heija, Dr. Sara Zaid, Dr. Rahma Al-Haddabi, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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</tbody>
</table>

The prevalence and risk factors associated with late stillbirths delivered at SQUH, Oman

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Investigators: Dr. Majeda Al-Bash, Prof. Adel Abu-Heija, Dr. Sarya Bella, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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</tr>
</tbody>
</table>

Reproductive outcome of women with breast cancer

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Investigator: Dr. Maha Al-Khaduri, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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</tr>
</tbody>
</table>

Assessment of awareness and acceptance of assisted reproductive technology (ART) and pre-implantation genetic diagnosis (PGD) among Omani women

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

Trends of patient preference in management of first trimester pregnancy loss towards the choice of medical termination with misoprostol or surgical termination of pregnancy in a tertiary care center in Oman

<table>
<thead>
<tr>
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<tr>
<td>Investigators: Dr. Tamima Al-Dughaishi, Dept. Obstetrics &amp; Gynaecology, SQU.</td>
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</table>
Profile and outcome of patients with pelvic organ prolapse and urinary incontinence managed at SQUH over 5 years: A retrospective study  

**Code:** MREC#947  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigators:** Dr. Lamya Al-Kharusi, Dr. Manjunatha Attibele, Dept. Obstetrics & Gynaecology, SQU; Ms. Moza Al-Beriki, Ms. Sara Al-Busafi, COM&HS Students, SQU.  

Metabolic profile and reproductive outcome of women with polycystic ovarian syndrome in Oman  

**Code:** MREC#951  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigators:** Dr. Lovina Machado, Dept. Obstetrics & Gynaecology, SQU; Ms. Maryia Al-Hosni, Ms. Munira Al-Zaabi, COM&HS Students, SQU.  

Clinical usefulness of white blood cell count after vaginal and cesarean delivery  

**Code:** MREC#971  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigators:** Dr. Vaidyanathan Gowri, Dr. Mariam Al-Shukri, Dept. Obstetrics & Gynaecology, SQU.  

Clinical profile and management of Omani women with severe pregnancy-related hypertension and postpartum periods  

**Code:** MREC#972  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigator:** Dr. Mariam Al-Shukri, Dept. Obstetrics & Gynaecology, SQU.  

Maternal risk factors associated with intrauterine growth restriction (IUGR) pregnancies  

**Code:** MREC#979  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigator:** Dr. Lovina Machado, Dept. Obstetrics & Gynaecology, SQU.  

Perinatal outcome in pregnancies complicated by intrauterine growth restriction (IUGR) in Omani mothers delivering at SQUH  

**Code:** MREC#981  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigator:** Dr. Lovina Machado, Dept. Obstetrics & Gynaecology, SQU.  

An audit of Caesarian sections by peer review  

**Code:** MREC#991  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigators:** Dr. Silja A. Pillai, Dr. Tamima Al-Dughaishi, Dr. Mariam Al-Shukri, Dr. Vaidyanathan Gowri, Dept. Obstetrics & Gynaecology, SQU.  

Prevalence of abnormal Pap smears of female patients in SQUH  

**Code:** MREC#1008  **Dates:** 2014  **Value:** Unfunded  **Project Approval:** SQU  

**Investigator:** Dr. Moza Al-Kalbani, Dept. Obstetrics & Gynaecology, SQU.  

**RESEARCH PUBLICATIONS & BOOKS**  

**Journal Publications**  


**CONFERENCE & SEMINAR PRESENTATIONS**

**Conference Presentations**

**International**


7. Al Ghafri WM. Prostatic tissue, an appendix and a mucinous cystadenoma, all in one mature cystic teratoma. 20th World Congress on Controversies in Obstetrics, Gynecology & Infertility (COGI), Paris, France, 4–7 Dec 2014.

**National**

1. Machado L. Update on management of recurrent IUGR. 4th National Conference on Advances in High Risk Obstetrics, Muscat, Oman, 4 Apr 2014.

**Poster Presentations**

**International**


7. **Al-Haddabi RH.** Has external cephalic version reduced the incidence of caesarian delivery for breech presentation at SQUH? 20th World Congress on Controversies in Obstetrics, Gynecology & Infertility (COGI), Paris, France, 4–7 Dec 2014.

### National

1. **Mathew M,** Ghayati M., Saqib S, Rizvi S. Association between HBA1C levels and pregnancy outcome in diabetic pregnancies. Diabetes Open Day, Sultan Qaboos University Hospital, Muscat, Oman, 18 Nov 2014.

2. **Mathew M,** Al Aamri NM, Zulfiqar S, Al Rasaadi K. Accuracy of Optium Xceed glucose meter for measuring blood glucose levels in pregnancy. Diabetes Open Day, Sultan Qaboos University Hospital, Muscat, Oman, 18 Nov 2014.

### Seminar Presentations

#### International


#### National


2. **Mathew M,** Al-Shukri M, Al-Ghafri W, Al-Kalbani M, **Al-Kharusi L,** **Gowri V.** A clinicopathological study of women with adnexal masses presenting with acute symptoms. University Day, Sultan Qaboos University, Muscat, Oman, 3 May 2014.


8. **Al-Riyami N.** Update on management of twins. 4th National Conference on Advances in High Risk Obstetrics, Muscat, Oman, 4 Apr 2014.


12. **Mathew M.** Diabetes in pregnancy. Nursing CME Workshop, Sultan Qaboos University Hospital, Muscat, Oman, 8 Sep 2014.

13. **Mathew M.** Type 1 diabetes and pregnancy. Gestational Diabetes Mellitus Workshop, National Diabetic & Endocrine Center, Muscat, Oman, 15 May 2014.

14. **Al-Ghafri W,** Al-Rejabi AF, El-Menzalawi A, Al-Riyami M. A mixed bag of tricks. SCRAPS, Sultan Qaboos University, Muscat, Oman, 6 Nov 2014.

### THESIS SUPERVISION

#### Student Name: Reham S. Al-Hinai

**Qualification:** M.D.

**Title:** Maternal risk factors associated with intrauterine growth restricted pregnancies at Sultan Qaboos University Hospital

**Supervisor:** Dr. Lovina Machado

**Date of completion:** On-going

#### Student Name: Noof A. S. Al-Essaei

**Qualification:** M.D.

**Title:** Perinatal outcome in pregnancies complicated by intrauterine growth restriction in Omani mothers delivering at Sultan Qaboos University Hospital

**Supervisor:** Dr. Lovina Machado

**Date of completion:** On-going

#### Student Names: Moza Al-Breika and Safa Al-Busafi

**Qualification:** M.D.

**Title:** Perinatal outcome in pregnancies complicated by intrauterine growth restriction in Omani mothers delivering at Sultan Qaboos University Hospital

**Supervisor:** Dr. Lovina Machado

**Date of completion:** On-going
Obstetrics & Gynaecology

Annual Report 2014

Supervisor: Dr. Lamya Al-Kharusi
Date of completion: On-going

Student Names: Athila Al-Rawahi and Ibtisam Al-Amri
Qualification: M.D.
Title: Perinatal outcome in pregnancies complicated by intrauterine growth restriction in Omani mothers delivering at Sultan Qaboos University Hospital

Supervisor: Dr. Moza Al-Kalbani
Date of completion: On-going

Student Names: Asma Al-Jahwari and Hamana Al-Musalhi
Qualification: M.D.
Title: Clinical profile and management of Omani women with severe pregnancy-related hypertension in the antenatal and postnatal period

Supervisor: Dr. Mariam Al-Shukri
Date of completion: On-going

Student Names: Mazin Al-Adhali and Hussein R. Al-Lawati
Qualification: M.D.
Title: Shoulder dystocia: Risk factors and foetal morbidity at Sultan Qaboos University Hospital, Oman

Supervisor: Prof. Adel Abu-Heija
Date of completion: On-going

Student Name: Marwa Bahrthe
Qualification: M.D.
Title: Effectiveness of the glucose challenge test (GCT) in screening for gestational diabetes among different maternal age groups

Supervisor: Prof. Adel Abu-Heija
Date of completion: On-going

Student Name: Khadija Al-Musalhi
Qualification: M.D.
Title: Effect of body mass index on oral glucose challenge test as a screening test for gestational diabetes mellitus

Supervisor: Prof. Adel Abu-Heija
Date of completion: On-going

Student Name: Mussab M. H. Al-Jabri
Qualification: M.D.
Title: Trends of patients’ preferences in the management of first trimester pregnancy loss towards the choice of medical termination with misoprostol or surgical termination of pregnancy in a tertiary care center in Oman

Supervisor: Dr. Tamima Al-Dughaishi
Date of completion: On-going

Student Name: Amjad H. Al-Haddabi
Qualification: M.D.
Title: Outcome of misoprostol use for medical termination of pregnancy in a tertiary care center in Oman

Supervisor: Dr. Tamima Al-Dughaishi
Date of completion: On-going
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-the-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. Advanced vitreo retinal procedures are performed (and both medical and surgical cases are managed) by experienced surgeons in the Department.

The Paediatric Ophthalmology Department has grown over the years into 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 has also been included in the last few years. 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**
Ahmed Al-Hinai, Senior Consultant, Vitreoretinal Surgeon

**Faculty**
- Nadiya Al-Kharousi, Senior Consultant, Anterior Segment Ophthalmology Unit
- Sana Al-Zuhaibi, Senior Consultant, Paediatric Ophthalmology Unit
- Abdullah Al-Mujaini, Senior Consultant, Oculoplasty Surgeon
- Anuradha Ganesh, Senior Consultant, Paediatric Ophthalmology Unit
- Mohammed Al-Abri, Senior Consultant, Vitreoretinal Surgeon
- Upender Wali, Senior Specialist
- Archana Thakral, Senior Specialist
- Nawal Al-Fadhl, Senior Specialist (training abroad)
- Buthaina S. Al-Sabt, Senior Specialist in Oculoplasty and Neuro-Ophthalmology
- Aisha Al-Busaidi, Senior Specialist (training abroad)
- Shahab Agha, Specialist-A
- Rana Al-Senawi, Specialist-A
- Samia Al-Jabri, Specialist-A (training abroad)
- Beena Harikrisna, Specialist-A
- Dalal Al-Zahra, Specialist
- Nouf H. Al-Farsi, Specialist (training abroad)
- Shahab Agha, Registrar
- Tysser A. R. Basi, Senior House Officer

**Support Staff (College)**
Laila Al-Kindi, Coordinator

**Support Staff (Outpatient Department)**
- Manju Thomas, Staff Nurse 1, Adult Team
- Priya Khora, Staff Nurse 1, Paediatric Team
- Bushra Al-Jabri, Optometrist
- Sreelatha O. K., Optometrist
- Edgardo Go, Optometrist
- Vidya Thomas, Optometrist
- Habiba Al-Belushi, Chief Technician
- 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-Harty, Technician
- Melinda Manegdeg, Coordinator

**Support Staff (4 Blue Ward)**
- Zaleha Bzaman, Senior In-Charge Nurse
- Idawati Puteri, In-Charge Nurse 5
- Marylin Dogle, In-Charge Nurse 5
- Alice Abraham, In-Charge Nurse 6
- Fahima Jualandani, 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 Gvevarghese, Staff Nurse 1
- Rahma Al-Hadhrami, Staff Nurse 1
- Minna Sunny V. I. P., Staff Nurse 1
- Bindu Biju, Staff Nurse 2
- Jennifer E. Farenas, Staff Nurse 2
- Joanna Martis, Staff Nurse 2
- Liza Linda, Staff Nurse 2
- Bindu K. Manuel, Staff Nurse 2
- Sumaiya Al-Sarhani, Staff Nurse 2
- Susan Jacob, Staff Nurse 2
- Sunimol Mathew, Staff Nurse 2
- Akhila Antony, Staff Nurse 2
- Racelle Balisi, Staff Nurse 2
- Ahlam Al-Mabsali, Staff Nurse 2
- Yusra Saif, Staff Nurse 2
- Badriya Al-Ghazi, Ward Clerk
- Qais Al-Seiabhi, Medical Orderly
- Naeema Al-Musalmi, Medical Orderly
- Khalsa Al-Ghandami, Medical Orderly

**Highlights of the Year 2014**

**CLINICAL ATTACHMENTS**

In 2014, three ophthalmologists came to the Department for clinical attachments.

**NATIONAL SYMPOSIA**

The Visual Electrophysiology Symposium was held on 12 January 2014 at the College of Medicine & Health Sciences. The Department invited Prof. Sten Andréasson from Lund University, Sweden, as a guest speaker of the presentation: Update in Visual Electrophysiology Testing. The symposium covered the following main topics: electrophysiology in clinical patients and in experimental and clinical research; diagnostic and electrophysiology approaches to retinal dystrophies; practical approaches to paediatric electrophysiology; visual evoked potentials in visual pathway diseases; the overlap between retinal dystrophies and optic nerve diseases; and clinical approaches to examine retinal disorders in combination with other handicaps. These topics were followed by presentations of clinical cases and general discussion.

Prof. Monica Lovestan from the University Hospital in Lund, Sweden, was also invited as a guest lecturer in 2014. She delivered a series of lectures on diabetic retinopathy at the Diabetic Retinopathy Symposium held at SQUH. Additionally, she met and held discussions with the Dean and Vice-Chancellor of the University. During her visit, Prof. Lovestan also visited the Ophthalmology Outpatient Department and met several vitreoretinal specialists. The purpose of Prof. Lovestan’s visit was to develop future
research collaboration for testing retinal function among diabetic patients prior to the appearance of structural changes using multifocal electroretinography as well as for assessing the effect of intravitreal anti-vascular endothelial growth factor therapy on retinal function using retinal electrophysiology.

The National Symposium in Ocular Genetics and Strabismus: Bridging the Gaps held on 26 March 2014 was organised by the Department of Ophthalmology in collaboration with the Oman Ophthalmic Society. As a guest speaker, the Department invited Prof. Elizabeth C. Engle, Neuro-Ophthalmology Research Chair at Harvard Medical School, Boston, Massachusetts, USA. Prof. Engle is an investigator of the Howard Hughes Medical Institute and member of the Departments of Neurology, Ophthalmology and Medicine at the Children's Hospital in Boston. Prof. Elias I. Traboulsi, Head of Pediatric Ophthalmology at the Cleveland Clinic in Cleveland, Ohio, USA, was also invited as a speaker. Prof. Traboulsi has authored more than 210 scientific articles, 60 book chapters and five books. He is the author and editor of “Genetic Diseases of the Eye”, published in 1998 by Oxford University Press with the second edition appearing in 2013.

**DEPARTMENTAL ACHIEVEMENTS**

On the Hospital Day Celebration on 17 February 2014, four members of the Department received awards in the following fields: Dr. Upender Wali (research), Dr. Sitara Azeem (clinical and administrative/information services), Dr. Dalal Al-Zhara (clinical services) and Dr. Rana Al-Senawi (clinical and administrative/quality services).

Dr. Abdullah Al-Mujaini co-presented a SCRAMS clinical-pathologic conference presentation on 23 October 2014. The presented topic was titled 'Wolf in the Attic'.

SQU became a new centre to host Fellowship of the Royal College of Surgeons examinations in Oman starting from November 2014.

**Teaching Programmes**

**UNDERGRADUATE CLINICAL PROGRAMMES**

The main objective of the course run by the Department is to introduce medical students to ophthalmology 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 disorders of the eye, such as cataracts, 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. The most important theoretical courses offered to residents are: Paediatric Ophthalmology; Corneal External Disease; Retinal Diseases; Optics & Refraction; Neuro-Ophthalmology; Glaucoma; Cataracts; Oculoplastic Procedures; Uveitis; and Phacoemulsification (short course).

**Preclerkship Programme**

In the preclerkship programme, the Department teaches modules of ophthalmology to 12–14 students per session for two days a week for 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 cases. They also need to keep a record of clinical and practical skills learned during their rotation in a log book and in the student’s electronic patient record.

**Junior Clerkship Programme**

In the junior clerkship programme, students are divided in two groups, spending seven working days in SQUH and eight working days in Al-Nahda Hospital. During the first half of their rotation they have five presentations on: red eye, trauma, visual loss, diplopia and pupillary reaction. In the second half, students rotate again, but by then they should have completed five modules and only necessary revisions are made.

**Training Courses & CME Activities**

A total of 88 CME courses were run by Departmental staff in 2014 [Table 1].

<table>
<thead>
<tr>
<th>Table 1: Continuing Medical Education Courses in 2014</th>
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<tbody>
<tr>
<td>1. Behçet’s Diseases</td>
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<tr>
<td>2. Macular Hole</td>
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<td>3. Superior Oblique Palsy</td>
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<td>4. Behçet’s Anterior Uveitis</td>
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<td>5. Retinal Dystrophies &amp; Optic Nerve Disease</td>
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<td>6. Basic &amp; Clinical Retinal Electrophysiology Part 2</td>
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<td>7. A Child with Nystagmus</td>
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<td>8. Retinal Structure &amp; Function in Diabetic Retinopathy</td>
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<td>10. Practical Approach to Paediatric Electrophysiology</td>
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<td>11. Electretinography: Case presentation</td>
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<td>12. Key Performance Indicator</td>
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<td>13. Different Diagnosis of Behçet’s Disease</td>
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<td>14. Astoytic Heamatoma</td>
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</table>
Clinical & Diagnostic Services

Ophthalmology outpatient statistics are shown in Table 2. Procedures performed by departmental staff and other statistics for 2014 are shown in Tables 3 to 7.

Table 2: Ophthalmology Outpatient Department statistics in 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>No.</th>
</tr>
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<tbody>
<tr>
<td>Patients booked</td>
<td>10,892</td>
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<tr>
<td>Patients seen</td>
<td>14,806</td>
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<tr>
<td>Patients admitted</td>
<td>627</td>
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<tr>
<td>DNA tests</td>
<td>3,156</td>
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<tr>
<td>Patients discharged</td>
<td>542</td>
</tr>
<tr>
<td>Patients for prescription only</td>
<td>2,335</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32,358</strong></td>
</tr>
</tbody>
</table>

Table 3: Minor operating theatre procedures in 2014

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
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<tbody>
<tr>
<td>Minor operation</td>
<td>201</td>
</tr>
<tr>
<td>Blood extraction</td>
<td>442</td>
</tr>
<tr>
<td>Sedation</td>
<td>59</td>
</tr>
<tr>
<td>Cannulation</td>
<td>118</td>
</tr>
<tr>
<td>Dilatation</td>
<td>6,939</td>
</tr>
<tr>
<td>Other</td>
<td>63</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,822</strong></td>
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</tbody>
</table>

Table 4: Laser procedures in 2014

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
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<tbody>
<tr>
<td>Argon</td>
<td>172</td>
</tr>
<tr>
<td>YAG</td>
<td>32</td>
</tr>
<tr>
<td>Photodynamic therapy</td>
<td>11</td>
</tr>
<tr>
<td>Avastin and lucentis injections</td>
<td>302</td>
</tr>
<tr>
<td>Fundus fluorescein angiography</td>
<td>111</td>
</tr>
<tr>
<td>Diabetic screening</td>
<td>177</td>
</tr>
<tr>
<td>Contact lens</td>
<td>48</td>
</tr>
<tr>
<td>Low vision service</td>
<td>4</td>
</tr>
<tr>
<td>Electroretinogram and visual-evoked potential</td>
<td>125</td>
</tr>
<tr>
<td>Orthoptic</td>
<td>298</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,280</strong></td>
</tr>
</tbody>
</table>

Table 5: Technical procedures in 2014

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refraction</td>
<td>262</td>
</tr>
<tr>
<td>Ultrasound</td>
<td>325</td>
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<tr>
<td>Pachymetry</td>
<td>223</td>
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<tr>
<td>Visual Field</td>
<td>612</td>
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<tr>
<td>Optical coherence tomography</td>
<td>2,334</td>
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<tr>
<td>Confoscan</td>
<td>28</td>
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<tr>
<td>Orbscan</td>
<td>137</td>
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<tr>
<td>Photo</td>
<td>457</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>4,381</strong></td>
</tr>
</tbody>
</table>

Table 6: Patient ward statistics in 2014

<table>
<thead>
<tr>
<th>Month</th>
<th>Adult patients</th>
<th>Paediatric patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>34</td>
<td>3</td>
</tr>
<tr>
<td>Feb</td>
<td>36</td>
<td>2</td>
</tr>
<tr>
<td>Mar</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Apr</td>
<td>8</td>
<td>0</td>
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<td>May</td>
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<td>Jun</td>
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<td>Nov</td>
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<tr>
<td>Dec</td>
<td>48</td>
<td>11</td>
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</table>

Table 7: Main Theatre surgeries in 2014

<table>
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<tr>
<th>Major</th>
<th>Intermediate</th>
<th>Minor</th>
<th>Total</th>
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<tr>
<td>321</td>
<td>57</td>
<td>141</td>
<td>519</td>
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</table>
Annual Report 2014

Research

RESEARCH PROJECTS

Use of ranibizumab (Lucentis®) in the treatment of cystic macular lesions in retinitis pigmentosa


Investigator: Dr. Anuradha Ganesh, Dept. Ophthalmology, SQU.

Clinical and genetic characteristics of Bardet-Biedl syndrome among Omani population


Investigator: Dr. Anuradha Ganesh, Dept. Ophthalmology, SQU.

Experience of intra-vitreal injections in a tertiary hospital in Oman


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

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Poster Presentations

International

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 for referrals for oral and maxillofacial surgery, special needs and paediatric dentistry. The Department continues to provide dental services including basic primary dental care, oral hygiene therapy, restorative, endodontic, as well as comprehensive paediatric dentistry and oral and maxillofacial surgery treatments.

The Department is also an active member of the trauma team of the 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 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 inpatients or day care visitors.
Staff

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

Faculty
Salim Al-Sudairy, Consultant, Oral & Maxillofacial Surgeon
Amur Al-Hajri, Consultant
Ali Al-Mullahi, Consultant, Paediatric Dentist
Muntasar Al-Hinai, Consultant, Orthodontist
Awatif Al-Maskery, Senior Registrar
Samira Al-Anqoodi, Registrar in Restorative Dentistry (on study leave)
Hana Al-Raisi, Registrar
Madelin Hernandaz, Registrar
Mehboob Pasha, Senior House Officer
Aftab Malik, Senior House Officer
Sanja F. Luetic, 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
Ibtisam Al-Ambusaidi, Medical Nurse
Blankaji Ouseph, Medical Nurse
Younis Al-Abri, Medical Nurse
Safa Al-Nabhani, Medical Nurse
Afrah Abdulbaqi, Dental Surgery Assistant
Sulaiman Al-Maqimi, Dental Surgery Assistant
Sarah Al-Siyabi, Dental Surgery Assistant
Khamis Al-Mufargi, Dental Laboratory Technician

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

Highlights of the Year 2014

The Department maintained a high standard of dental and maxillofacial patient care 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 for SQUH patients.

The Department's clinical staff were actively involved in local scientific events and dental conferences conducted by the Ministry of Health (MOH), Oman Dental College and Oman Dental Society in 2014. Dr. Abdulaziz Bakathir presented a scientific paper at the Diabetes Workshop organised by the Al-Shadi Health Centre in February 2014. Furthermore, Dr. Abdulaziz presented the Department’s SCRAPS clinico-pathologic conference activity on 25 December 2014 and also collaborated as a co-presenter during the General Surgery SCRAPS clinico-pathologic conference activity in April 2014. In addition, Dr. Abdulaziz attended the 6th Comprehensive Course in Maxillofacial Surgery in Greece during May 2015 and Mr. Khamis Al-Mufargi attended the Comprehensive General Dental Technician Workshop in the USA during August 2014.

In 2014, the Department continued the production of a series of educational leaflets for patients covering a range of dental and oral surgery conditions. In addition, a series of educational posters were made and presented during the Health Education Day in 2014. This work was done by the Department’s dental hygienist, Ms. Zahra Al-Ghafri.

Teaching Programmes

The Oral Health Department continued to provide teaching support to M.D. degree students at the SQU College of Medicine & Health Sciences (COM&HS), MOH and the Institute of Health Sciences of the MOH. This included: 1) preclerkship and junior clerkship teaching of M.D. students at the COM&HS; 2) clinical training of 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 for 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 and oral and maxillofacial surgical treatments. The number of patients seen and treated at the Department’s outpatient setting reduced by 477 during 2014 compared to 2013 [Figure 1]. This small reduction was a reflection of the staffing issues during 2014 and also due to the newly approved criteria for eligibility of treatment at the Department’s outpatient setting that was implemented in September 2014.

In 2014, the Department recorded an increase in the number of complex medically-compromised cases admitted for dental and oral and maxillofacial surgery treatments. Furthermore, there was an 8% increase in the total number of inpatient admissions in oral and maxillofacial surgery compared to 2013. In addition, the Department continued to be actively involved in the SQUH 24-hour on-call service in collaboration with the Department of Emergency Medicine.

Research

Research Publications & Books

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Seminar Presentations

National

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

The Department's teaching mandate includes the World Federation for Medical Education-accredited M.D. curriculum and the B.Sc. Biomedical Sciences programme. 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 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 is a leader in CME by organising workshops and CME activities and offering short-term training courses to health professionals.

We provide specialist diagnostic services in histopathology, cytopathology, enzyme and immunohistochemistry, fluorescent microscopy, electron microscopy and molecular pathology to SQUH. The Hospital was accredited by Accreditation Canada International in 2014. The Department is registered and subscribes to international external quality assurance programmes in anatomic pathology, cytopathology and immunohistochemistry including both diagnostic (general and subspecialty) and technical modules.

The Department is actively engaged in research in collaboration with other clinical departments of SQUH and other colleges of Sultan Qaboos University. Several funded and unfunded research projects were initiated in 2014. The electron microscopy unit, in particular, undertakes many research projects with other colleges within SQU as well as other institutions.

With a total of two academic and five senior clinical faculty members and 24 biomedical scientists, the Department functions as a major referral centre for many Ministry of Health (MOH) hospitals, the Armed Forces Hospital (AFH), Royal Oman Police Hospital as well as some of the private hospitals in the country. The following cases are referred to us: renal biopsies (country-wide), fluores-
cent tests (MOH and AFH) and immunohistochemical tests (AFH). The junior staff includes three registrars and two senior house officers. Two of them are under the OMSB residency programme.

Staff

**Head of Department**
Ritu Lakhitkia, Associate Professor

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

**Faculty**

Asem Shalaby, Assistant Professor
Shadia Al-Bahlan, Assistant Professor
Nasar Al-Wahaibi, Research Associate
Aisha Al-Hamdani, Senior Consultant
P. A. M. Saparamadu, Senior Consultant
Marwa Al-Riyami, Senior Consultant
Asim Qureshi, Consultant
Suad Al-Jahdhami, Consultant
Fathiya Al-Rabhi, Specialist
Maiya Al-Bahri, Specialist
Asmaa Al-Shibi, Specialist
Radhia A. Al-Ajmi, Specialist
Shayma Gamal, Senior House Officer

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

**Biomedical Scientists**

Johanes 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
Shadid Al-Sinawi, Senior Biomedical Scientist
Khalid Al-Hosni, Senior Biomedical Scientist
Mohammed Al-Kindi, Biomedical Scientist
James Vijayan, Biomedical Scientist
Yusra Al-Belushi, Biomedical Scientist
Najat Al-Dairi, Biomedical Scientist
Amna Al-Shukeili, Biomedical Scientist
Bader Al-Sumri, Biomedical Scientist
Horiya Al-Azri, Biomedical Scientist
Muna Al-Sarkhi, Biomedical Scientist
Safaa Al-Rawahi, Biomedical Scientist
Nadia Al-Abri, Biomedical Scientist
Abdulrahman Al-Nabhani, Biomedical Scientist
Afrah Al-Rashdi, Biomedical Scientist
Maryam Al-Subhi, Biomedical Scientist
Zaina Al-Alawi, Biomedical Scientist

**Support Staff**
Ahmed Al-Hinai, Mortuary Technician

Edna B. Ranada, Coordinator (College)
Nadeera K. Ammu, Coordinator (Hospital)
Shamla Sheriff, Coordinator (Hospital)
Badriya Al-Hinaai, Coordinator (Hospital)
Lubna Al-Abri, Coordinator (Hospital)

**Highlights of the Year 2014**

The Department organised the First Surgical Pathology Update, under the aegis of SQU at the Al-Faham Hall from 19–20 February 2014. Prof. Roshan Chinoy and Dr. Alexander Knisely, renowned experts in breast and liver pathology, respectively, regaled the delegates from Oman and abroad. They were accompanied by multidisciplinary experts from Oman including medical oncologists, breast and hepatobiliary surgeons, paediatricians and radiologists.

The OMSB Histopathology Training Program Re-review Survey Team visited the Pathology Laboratory of SQUH on 28 April 2014 for accreditation of the programme and conducted an internal review and site visit on 11–13 November 2014. The Department participated in the pre-accreditation National Accrediting Agency for Clinical Laboratory Science (NAACLS) Allied Health Science-Knowledge Sharing Session and Workshop from 2–3 November 2014.

The Electron Microscope Unit received a delegation from the European Centre of Expertise for the Healthcare Industry on 4 March 2014. An external examiner for the B.Sc. Biomedical Sciences (BMS) programme, Dr. Keith Morris, visited the Department from 7–13 June 2014.

Prof. Klaus Leifer, from Uppsala University, Sweden, in collaboration with a group from JEOL Ltd. (Tokyo, Japan), held two training and advisory workshops for using the 2100F field emission transmission electron microscope (JEOL Ltd.) from 15–24 November 2014 and 28 December 2014–6 January 2015. The workshops covered theoretical and practical backgrounds in diffraction, transmission electron microscopy and the production of transmission electron microscopy images.

The Department demonstrated its spirit of community participation and service by scheduling visits from school students. On 28 September 2014, 28 science students from grades 5-10 and two supervisors from the Aseela Bint Qais Al-Busaidi School (Ministry of Education) visited the Pathology Museum and Electron Microscope Unit. On 11 December 2014, 25 science students and two supervisors from the Dorat Al-Khaleej school visited the Department of Pathology. The Electron Microscope Unit provided short training courses to three students from the College of Science, SQU, in January 2014. The SQUH Pathology Laboratory provided technical training to six technologists from MOH throughout the year. A total of 13 students from COM&HS and the Colleges of Engineering, Science and Agricultural & Marine Sciences at SQU conducted part of their graduation research in collaboration with the Electron Microscope Unit.
Teaching Programmes

UNDERGRADUATE PROGRAMMES

Pathology faculty are active contributors to implementing the curriculum through membership of the COM&HIS Curriculum and Examination Committees and coordination of the Locomotor, Integrated and Research modules (M.D. programme) and the Clinical Correlations and Biology of Cancer modules (BMS programme).

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 & 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.

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 so as to improve their clinico-pathological correlation in an integrated format. In addition, the integration of pathology with clinical dermatology training is achieved by small group teaching in pathology during their junior clerkship programme. These didactic exercises are further augmented through student attendance of the multidisciplinary meetings in the Department of Pathology with the Breast Unit and the Departments of Surgery, Medicine (Oncology), Child Health (Paediatrics), Obstetrics & Gynaecology and Haematology.

B.Sc. Biomedical Sciences Programme

The establishment of a new department in CO&MHS known as the Department of Allied Health Sciences was approved by the University Council of SQU in 2014. Three department members, including Dr. Shadia Al-Bahlani (who was designated Head of Department) and one associate researcher and biomedical scientist were transferred out of the Department of Pathology in mid-2014 to join this new department. Pathology academic and clinical faculty continue to teach full-time in the Biology of Cancer and Clinical Correlations modules of the BMS programme. Senior biomedical scientists also undertake didactic teaching and laboratory training in histopathology, cytology and electron microscopy. A new internship module was designed and delivered in summer 2014.

POSTGRADUATE PROGRAMME

OMSB Histopathology Residency Programme

The Pathology faculty train OMSB residents and members of the Department hold several positions including Programme Director and Associate Programme Director as well as Chair of Research and Internal Review sub-committees. The OMSB Research Day for Histopathology was organised by the Department on 25 September 2014. The Department was the venue for the end-of-year OMSB examinations in June 2014.

Training Courses & CME Activities

The Electron Microscopy Unit, in collaboration with other members of the Pathology Department, organised a workshop entitled ‘New Correlative Light and Electron Microscopy Workflow Solutions for Life Science’ on 6 January 2014. Dr. Suad Al-Jahdhami and Ms. Nadia Al-Abri at the 3rd European-Asian Mastology Breast Cancer Congress on 28 October 2014. A workshop on fine needle aspiration cytology was organised on 15 April 2014 for the Standing Committee on Medical Education, part of the International Federation of Medical Students’ Associations, by Dr. Ritu, assisted by Ms. Najat Al-Dairi and Ms. Nadia.

Dr. Ibrahim Al-Haddabi was chairman of the organising committee for the Update on Soft Tissue Tumour Pathology Workshop from 21–22 March 2014, which was attended by several faculty members. Dr. Ibrahim also attended the following events: a workshop on updating regional continuing professional development (CPD) guidelines and website in February 2014; the 17th meeting of the European Association for Haematopathology, Istanbul, Turkey, in October 2014; and a training course on polymerase chain reaction interpretation of lymphoma, University Medical Center Rotterdam, Rotterdam, the Netherlands, in August 2014. Dr. P. Saparamadu attended the Assembly of Asia Pacific International Academy of Pathology Diagnostic Pathology Update and the College of Pathologists of Sri Lanka Annual Academic Sessions in Colombo, Sri Lanka, from 27–29 August 2014. Dr. Marwa Al-Riyami was an invited member of the accreditation team for reviewing the Ophthalmology residency programme of the OMSB in May 2014.

Dr. Khalaf Al-Gharibi attended the Workshop in Dealing with Difficult Employees from 11–12 May 2014 and the NAACLS Standards Workshop from 2–3 November 2014 for the accreditation purposes of the BMS programme.
Mr. Mohammed Al-Kindi and Mr. Abdulrahman Al-Nabhani visited the Masdar Institute of Science & Technology in Abu Dhabi, UAE, to learn about the different high resolution electron microscopes available in the Gulf region. Mr. Mohammed attended the Advanced Training Course on Scanning Electron Microscopy held by the Bio-Nano Electronics Research Centre of Toyo University, Tokyo, Japan, from 25 November–5 December 2014. Mr. Abdulrahman attended the Gatan Inc. Electron Energy-Loss Spectroscopy & Energy-Filtered Transmission Electron Microscopy Analysis School in California, USA, from 8–11 April 2014.

Several faculty members attended OMSB faculty development workshops including Learning & Assessment, Health Advocate Role and OMSB Faculty Development Workshops on 8 March 2014 and the Scientific Programme Accreditation Workshop on 20 March 2014.

Clinical & Diagnostic Services

The Department continues to witness an increase in surgical pathology/cytology specimens in parallel with expanding clinical subspecialties. The year 2014 began with the initiation of subspecialty reporting and the creation of teams that focus on specific organ pathology. These teams are aligned with respective branches of medicine and surgery to offer the most focused and skilled approach to the diagnosis of patients. This new measure is also expected to enhance research and introduce new tests that will complement the SQUH strategic approach to building centres of excellence.

Currently the majority of referral cases from other hospitals are for renal pathology. There is also a demand for opinions on biopsies of lymph nodes and bone marrow. With well-organised and high-quality immunohistochemistry and fluorescent facilities, diagnostic referrals for skin biopsies and soft tissues are increasing. The Department remains the only health facility offering electron microscopic evaluation of material. The Electron Microscope Unit received 233 diagnostic samples from different hospitals in the country and 500 research samples for different applications.

In 2014, the neuropathology services were boosted with the return of a qualified neuropathologist to the Department and planning for in-house tests that were formerly outsourced. There was also constructive cross-talk between specialisations available in SQUH and MOH hospitals catering for continuity of service during the absence of the relevant specialist.

Department faculty also contributed actively to hospital administration activities related to strategic planning, development, quality and procurement.

The SQUH Pathology Laboratory ensures quality standards by comprehensive auditing, peer review and participation in both diagnostic and technical external quality control modules in anatomic pathology and cytology. The weekly Tumour Board and Breast Multidisciplinary Team meetings have pioneered the concept of multidisciplinary management delivering better patient care through dialogue.

Research

RESEARCH PROJECTS

Whole genome microarray expression analysis on Omani patients with colon cancer

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<tbody>
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<td>Investigators: Dr. Marwa Al-Riyami, Dept. Pathology, SQU; Dr. Abeer Al-Sayegh, Dept. Genetics, SQU; Prof. Mansour Al-Moundhri, Dept. Medicine, SQU.</td>
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Expression of tumor necrosis factor-alpha and other cytokines in renal transplant patients and those with chronic renal disease

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<tr>
<td>Investigators: Dr. Ritu Lakhtakia, Dr. P. Saparamadu, Dr. Ibrahim Al-Haddabi, Dept. Pathology, SQU; Dr. Jamal Sallam, Dept. Medicine, SQU.</td>
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Mast cells in chronic gastritis: A morpho-immunophenotypic study with clinicopathologic correlation

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<tr>
<td>Investigators: Dr. Nasar Al-Wahaibi, Dr. Marwa Al-Riyami, Dept. Pathology, SQU; Dr. Mohammed Al-Balushi, Dept. Microbiology &amp; Immunology, SQU; Dr. Ahmed Shukaili, The Research Council, Oman; Dr. Abdullah Al-Muniri, Dept. Family Medicine &amp; Public Health, SQU.</td>
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Table 1: Workload of histopathology/cytology/electron microscopy in 2014

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<tr>
<th>Type of test</th>
<th>Request</th>
<th>Test</th>
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<td>Histology*</td>
<td>7,071</td>
<td>51,977</td>
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<tr>
<td>Cytology - gynaecological</td>
<td>1,427</td>
<td>1,502</td>
</tr>
<tr>
<td>Cytology - systemic</td>
<td>1,427</td>
<td>5,104</td>
</tr>
<tr>
<td>Immunohistochemistry</td>
<td>2,049</td>
<td>16,488</td>
</tr>
<tr>
<td>Immunofluorescence</td>
<td>267</td>
<td>1,858</td>
</tr>
<tr>
<td>Enzyme histochemistry</td>
<td>8</td>
<td>88</td>
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<tr>
<td>Molecular histochemistry</td>
<td>72</td>
<td>241</td>
</tr>
<tr>
<td>Electron microscopy</td>
<td>798</td>
<td>2,170</td>
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</tbody>
</table>

*Number of tests includes blocks (n = 18,327), haematoxylin and eosin slides (n = 27,663) and special stains (n = 5,987).
<table>
<thead>
<tr>
<th>Study</th>
<th>Code</th>
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<th>Value</th>
<th>Project Approval</th>
<th>Investigator</th>
<th>Department</th>
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<tbody>
<tr>
<td>Spectrum of histopathological changes in duodenal mucosa in Helicobacter pylori-associated gastritis and comparison to celiac disease</td>
<td>MREC #885</td>
<td>2014–2015</td>
<td>Unfunded</td>
<td>SQU</td>
<td>Dr. P. Saparamadu</td>
<td>Pathology, SQU</td>
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<tr>
<td>Morphological spectrum of polyps in the large intestine: A review of cases over the past three years</td>
<td>MREC #912</td>
<td>2014–2015</td>
<td>Unfunded</td>
<td>SQU</td>
<td>Dr. Asim Qureshi</td>
<td>Pathology, SQU</td>
</tr>
<tr>
<td>Study of the epithelial changes in gastric biopsies associated with Helicobacter pylori infection in Omani patients</td>
<td>MREC #913</td>
<td>2014–2015</td>
<td>Unfunded</td>
<td>SQU</td>
<td>Dr. Asem Shalaby</td>
<td>Pathology, SQU</td>
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<td>The role of phospholipase A2 receptor in the diagnosis of membranous glomerulopathy</td>
<td>MREC #925</td>
<td>2014–2015</td>
<td>Unfunded</td>
<td>SQU</td>
<td>Dr. Nasar Al-Wahaibi</td>
<td>Pathology, SQU</td>
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<tr>
<td>Stromal changes associated with breast cancer in Omani women</td>
<td>MREC #978</td>
<td>2014–2015</td>
<td>Unfunded</td>
<td>SQU</td>
<td>Dr. Ritu Lakhtakia</td>
<td>Pathology, SQU</td>
</tr>
<tr>
<td>Atypical urine cytology samples: Cytological features predictive of malignancy</td>
<td>MREC #989</td>
<td>2014–2015</td>
<td>Unfunded</td>
<td>SQU</td>
<td>Dr. Marwa Al-Riyami</td>
<td>Pathology, SQU</td>
</tr>
<tr>
<td>Atypical urine cytology: Diagnostic value of classifying atypical cells into favoring malignant or reactive</td>
<td>MREC #990</td>
<td>2014–2015</td>
<td>Unfunded</td>
<td>SQU</td>
<td>Dr. Marwa Al-Riyami</td>
<td>Pathology, SQU</td>
</tr>
<tr>
<td>Chemoresistance in breast cancer: The role of E2F1 activation and its modulation by Akt pathway</td>
<td>IG/MED/PATH/14/01</td>
<td>2014–2015</td>
<td>OR 15,500</td>
<td>SQU</td>
<td>Dr. Marwa Al-Riyami</td>
<td>Pathology, SQU</td>
</tr>
</tbody>
</table>

**Research Publications & Books**

**Journal Publications**

14. **Al-Haddabi I, Qureshi A, Saparamadu A, Al-Ham...**


Book Chapters


CONFERENCES & SEMINAR PRESENTATIONS

Conference Presentations

National


Poster Presentations

International


Seminars Presentations

International

2. Lakhtakia R. Slide seminar on pleomorphic sarcomas. Update on Soft Tissue Tumor Pathology Workshop, Arab School of Pathology, OMSB, Muscat, Oman, 22–23 Mar 2014.

3. Lakhtakia R. Slide seminar on spindle cell sarcomas. Update on Soft Tissue Tumor Pathology Workshop, Arab School of Pathology, OMSB, Muscat, Oman, 22–23 Mar 2014.


THESIS SUPERVISION

Student Name: Manal H. K. Al-Khambashi

Qualification: Ph.D.

Title: From gene expression analysis of Omani breast tumors to biomarkers/candidate gene discovery

Supervisors: Dr. Marwa Al-Riyami and Prof. Mansour Moundhri

Date of completion: Jun 2014
<table>
<thead>
<tr>
<th>Student Name</th>
<th>Qualification</th>
<th>Title</th>
<th>Supervisors</th>
<th>Date of completion</th>
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</thead>
<tbody>
<tr>
<td>Ishita Gupta</td>
<td>Ph.D.</td>
<td>Identification and validation of genes involved in breast tumour invasion</td>
<td>Dr. Marwa Al-Riyami and Dr. Allal Ouhtit</td>
<td>On-going</td>
</tr>
<tr>
<td>Abdullah M. D. Al-Salmi</td>
<td>M.D.</td>
<td>Histopathological changes in duodenal mucosa in <em>Helicobacter pylori</em>-associated gastritis and comparison to celiac disease</td>
<td>Dr. P. Saparamadu</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>Ikræam 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</td>
<td>Dr. Ritu Lakhtakia</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>Maitha H. S. Al-Sibani</td>
<td>M.D.</td>
<td>Pathological findings of crescentic glomerulonephritis in Omani patients</td>
<td>Dr. Marwa Al-Riyami</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>Dalal O. Al-Harthi</td>
<td>M.D.</td>
<td>Clinical features of crescentic glomerulonephritis in Omani patients</td>
<td>Dr. Marwa Al-Riyami</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>Sumaiya Mohammed and Mariam M. A. Harbi</td>
<td>M.D.</td>
<td>Histological evaluation of duodenal biopsies of patients of celiac disease: Histopathological assessment by MARSH grading system</td>
<td>Dr. Asim Qureshi</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>Asaad M. S. Al-Hinai</td>
<td>M.D.</td>
<td>Spectrum of histopathological changes in duodenal mucosa in <em>Helicobacter pylori</em>-associated gastritis and comparison to celiac disease</td>
<td>Dr. P. Saparamadu</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>Fatma Al-Shukili</td>
<td>M.D.</td>
<td>Stromal changes associated with breast cancer in Omani women</td>
<td>Dr. Ritu Lakhtakia</td>
<td>On-going</td>
</tr>
<tr>
<td>Bushra Al-Ansari</td>
<td>B.Sc.</td>
<td>Evaluation of rosuvastatin, sildenafil and pioglitazone by transmission electron microscopy on Sprague-Dawley rat ileal biopsy: Focus on ultrastructure</td>
<td>Dr. Nasar Al-Wahaibi</td>
<td>May 2014</td>
</tr>
<tr>
<td>Iman Al-Reesi</td>
<td>M.Sc.</td>
<td>Role of antigen presenting cells in liver damage during hepatitis B and C infections</td>
<td>Prof. Ali Al-Jabri and Dr. Khalid Al-Naamani</td>
<td>May 2014</td>
</tr>
<tr>
<td>Afra S. Al-Abri</td>
<td>M.Sc.</td>
<td>Mutation status of <em>EGFR Kras, BRAF, Fat4 and ARI-D1A</em> genes in an Omani gastric cancer cohort</td>
<td>Dr. Marwa Al-Riyami</td>
<td>Jun 2014</td>
</tr>
</tbody>
</table>
The Department of Pharmacology & Clinical Pharmacy plays an active teaching role in the College of Medicine & Health Sciences’ (COM&HS) curricula as well as in the College of Nursing’s educational programme at Sultan Qaboos University (SQU). The Department also offers a Master’s and Doctoral degree in Clinical Pharmacy and contributes to the teaching of other Master’s courses. The Department coordinates the Research Method & Critical Analysis of Scientific Information Course. In addition, we coordinate the Cellular Communication & Introduction to Drug Action and Alimentary System courses in the M.D. programme and offer two elective courses in Arabic: Drugs, Nutrients & Narcotics and History of Medicine.

Research activities embrace different areas of experimental and clinical pharmacology and therapeutics.

**Staff**

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

**Faculty**
Musbah Tanira, Professor
Badreldin Ali, Professor
Abdel-Hamid Elhawary, Associate Professor
Ibrahim Al-Zakwani, Associate Professor

Khalid Al-Balushi, Assistant Professor
Yousuf Al-Suleimani, Assistant Professor
Ibrahim Younos, Assistant Professor

**Support Staff**
Ikhlas A. Ahmed, Researcher
Ahmed Al-Mahrouqi, Biomedical Scientist
Jamila Al-Kalbani, Biomedical Scientist
Mahfouda Al-Busaidi, Technician
Mercy Calma, Coordinator
Highlights of the Year 2014

In 2014, the Department was given the responsibility of coordinating the Cellular Communication & Introduction to Drug Action and Alimentary System courses as well as participating in many system module courses. Also, the Department was involved in supportive learning topics (SLTs) in the preclerkship (SLT-Pharmacology) and senior clerkship (SLT-Therapeutics) programmes. The Department was requested by the Department of Food Science & Nutrition of the SQU College of Agricultural & Marine Sciences to offer a Pharmacology course to their students; hence, the Basics of Pharmacology & Nutrition (PHAR2001) course was designed and delivered in the spring semester of 2014.

During the year, the Department recruited Dr. Ibrahim Younos, Assistant Professor, and appointed a visiting consultant, Prof. Aly Abdelrahman, in September 2014. Dr. Abdel-Hamid Elhawary left the Department in June. Mrs. Mahfouda Al-Busaidi, technician, was transferred to the Ministry of Agriculture in Barka in November and was replaced by Ms. Jamila Al-Kalbani.

During the year, the Department acquired the following equipment: a mouse/rat activity wheel; an Aron test box; analytical balance equipment; a blood pressure recorder; a chemistry analyser; an electrophoresis system; an enzyme-linked immunosorbent assay workstation; a hot plate stirrer; an incubator; a liquid nitrogen storage system; a myograph; an osmometer; an infrared thermometer; a multi-channel pipette; a refrigerator; a stereo microscope; a treadmill; an ultraviolet–visible spectrophotometer; a vacuum pressure pump; a vacuum manifold for sample preparation; a whirl mixer; black-box and white-box testing software; pipettes; and repetitive electronic pipettes. These items were used for research activities and teaching.

The research output for 2014 consisted of 13 research projects, eight international poster presentations, 28 publications in peer-reviewed journals, two conference presentations and two seminar presentations. The Department also contributed to medical science through its reviewer 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 COM&HS, participated in national and international conferences. The Department contributes to undergraduate teaching and editorial activities in various medical journals. Staff members were involved in different research activities and continued to coordinate the Master’s degree core course, Research Method & Critical Analysis for Scientific Information. The Department also participates in the M.Sc. Clinical Biochemistry degree.

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

We also offer a Doctoral degree (Ph.D.) in Clinical Pharmacy and continue to coordinate the Master’s degree core course, Research Method & Critical Analysis for Scientific Information. The Department also participates in the M.Sc. Clinical Biochemistry degree.

The Department is involved in the Pharmacy Working Group to establish a pharmacy specialty for the Oman Medical Specialty Board.

Teaching Programmes

UNDERGRADUATE PROGRAMME

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

The Department delivers lectures and tutorials for the following courses: Cellular Communication & Introduction to Drug Action; Response to Infection & 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 and supervises approximately 15 undergraduate research projects every year.

In Phase III of the M.D. programme, the Department continues to be involved in the preclerkship programme. Topics for SLTs are delivered to the students in collaboration with the Department of Pharmacy at SQUH. The Department continues to deliver courses for senior clerkship students, including SLT-Therapeutics, which was re-designed by the Department following good feedback from the students. We are also involved in the Obstetrics & Gynaecology and Behavioural Medicine senior clerkship clinical rotations.

POSTGRADUATE PROGRAMME

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

We also offer a Doctoral degree (Ph.D.) in Clinical Pharmacy and continue to coordinate the Master’s degree core course, Research Method & Critical Analysis for Scientific Information. The Department also participates in the M.Sc. Clinical Biochemistry degree.

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

RESEARCH PROJECTS

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-UAEMed/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, Al Ain, UAE.

Use of natural antioxidant and anti-inflammatory agents in experimental chronic kidney disease: Possible effects


Investigators: Prof. Badreldin Ali, Dr. Mohammed Al-Za‘abi, Dept. Pharmacology & Clinical Pharmacy, 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 Elhawary, Prof. Badreldin Ali, Dr. Khalid Al-Balushi, Dr. Yousuf Al-Suleimani, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Mostafa Wali, Dept. Food Sciences & Nutrition, College of Agriculture & Marine Sciences, SQU.

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

Code: IG/MED/PHAR/14/01  Dates: 2014  Value: OR 12,500  Funder: SQU

Investigators: Dr. Ikhlas Ahmed, Mrs. Mahfouda Al-Busaidi, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Shadia Al-Bahlan, Dept. Pathology, SQU.

Impact of CYP2C19 and ABCB1 polymorphisms on the antiplatelet effect of clopidogrel in Omani

Code: IG/MED/PHAR/14/02  Dates: 2014  Value: OR 20,000  Funder: SQU

Investigators: Dr. Khalid Al-Balushi, Dr. Mohammed Al-Za‘abi, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Prashanth Panduranga, Dr. Mohammed Al-Mukhaini, Dept. Cardiology, Royal Hospital, Muscat, Oman.

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.

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


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


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

Paracetamol poisoning in Sultan Qaboos University Hospital (SQUH)


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

Utilization pattern of antidepressants at Sultan Qaboos University Hospital


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

A descriptive study on drug utilization pattern in the intensive care unit at Sultan Qaboos University Hospital


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

Pattern of prescription drug use among pregnant women at Sultan Qaboos University Hospital


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

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

National


Poster Presentations

International


Seminars Presentations

National

1. Al Balushi K. Interactive session on university and college research grants. College of Medicine & Health Sciences Annual Retreat, Sultan Qaboos University, Muscat, Oman, 24 May 2014.

2. Ali BH. Citations, H-index, Impact Factor...Should we care? Sustainable Agriculture & Marine Environment (SAME) Seminar, College of Agricultural & Marine Sciences, Sultan Qaboos University, Muscat, Oman, 9 Dec 2014.

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
| Student Name: Tanira and Dr. Ibrahim Al-Zakwani | Date of completion: On-going |
| Qualification: | |
| Title: | |
| Supervisor: | |

| Student Name: Muna M. Al-Balushi | Qualification: M.Sc. Clinical Pharmacy |
| Date of completion: On-going |
| 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-Hamid Elhawary |
| Date of completion: Feb 2014 |

| Student Name: Juhaina M. Al-Moqbali | Qualification: M.Sc. Clinical Pharmacy |
| Date of completion: Jun 2014 |
| Title: Evaluation of sampling time and indications for therapeutically monitored drugs at Sultan Qaboos University Hospital |
| Supervisor: Dr. Mohammed Al-Za’abi |

| Student Name: Bushra Al-Lawati | Qualification: M.Sc. Clinical Pharmacy |
| Date of completion: On-going |
| Title: Impact of busulfan clearance on clinical outcomes in Omani patients undergoing bone marrow transplantation |
| Supervisor: Dr. Mohammed Al-Za’abi |

| Student Name: Sara Ahmed | Qualification: M.Sc. Clinical Pharmacy |
| Date of completion: On-going |
| Title: Risk of bleeding between dabigatran and warfarin users at Sultan Qaboos University Hospital: A retrospective analysis |
| Supervisors: Dr. Ibrahim Al-Zakwani and Dr. Khalid Al-Balushi |
The Department of Pharmacy at the Sultan Qaboos University Hospital (SQUH) is considered to be a 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 and most effective, safe and cost-effective medication to a properly identified patient at the appropriate time with sufficient written and verbal patient information and to disseminate appropriate and unbiased drug-, poison- and disease-related information to patients and medical, pharmacy, nursing and allied healthcare professionals.

The Department is divided into six major sections: Pharmacy Administration & 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 average outpatient waiting time has also been maintained below 30 minutes, even during 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 Departments 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.
Highlights of the Year 2014

In April 2014, the Department organised a workshop on medication safety which presented the SQUH experience on the reporting of adverse drug reactions (ADRs). This workshop was conducted in collaboration with the Sultan Qaboos Hospital in Salalah. Furthermore, in December 2014, the Department organised another workshop on pharmacovigilance in Rustaq Hospital in Rustaq. This workshop presented the SQUH experience.

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 total parenteral nutrition (TPN) for 5th year medical students; and lectures on patient adherence to prescribed medications and talking to patients about their medications for preclerkship medical students.

In addition, six educational sessions on ADR reporting as part of a supportive learning topic (therapeutic) were given to senior clerkship medical students in 2014.

Training Courses & CME Activities

In 2014, staff of the Department contributed to CME activities by teaching the following topics/courses: Pain Management Course - Pharmacotherapy & Pain Management; Chemotherapy Course; Central Sterile Supplies Department Course - Chemical Agents & 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, Oman Medical College, the Oman Assistant Pharmacist Institute, the Higher College of Technology and the Armed Forces Hospital (AFH). Additionally, the Pharmacy Department contributed to Diabetic Health Education Day and other activities, including posters about the handling of chemotherapy and leaflets designed to increase drug awareness among patients and care providers on Patient Education Day.

Teaching and training involved lectures to pharmacy staff, pharmacy trainees, medical students and hospital staff. Training was also provided to assistant pharmacy students, pharmacy students, assistant pharmacists and junior pharmacy staff.

Clinical & Diagnostic Services

OUTPATIENT PHARMACIES

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 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 2014, more than 667 patients received detailed counselling on the use of their medications. Furthermore, the outpatient pharmacies dispensed a total of 161,060 prescriptions, for a total of 493,465 items [Figure 1].

**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 reviews and provision of medicine information. Clinical pharmacists also intervene to optimise drug therapy by connecting doses and frequencies [Figures 2 & 3].

The development of clinical treatment guidelines and patient educational material is a major activity of clinical pharmacists. In 2014, the following guidelines were produced or updated: Cisplatin administration guideline; docetaxel administration guideline; paclitaxel administration guideline; rituximab administration guideline; guidelines for vancomycin and aminoglycosides (traditional and non-traditional dosing guidelines); guidelines on the management of hypokalemia in adults; omalizumab administration guideline; natalizumab administration guideline; and octreotide administration guideline.

In 2014, clinical interventions increased by 53% to 4,756 compared to 3,110 in 2013. 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.

### Table 1: Aseptic Preparation Unit manufacturing activities in 2010–2014

<table>
<thead>
<tr>
<th>Activity</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total parenteral nutrition bags prepared</td>
<td>3,030</td>
<td>3,388</td>
<td>3,627</td>
<td>4,346</td>
<td>4,059</td>
</tr>
<tr>
<td>Cytotoxic doses prepared</td>
<td>9,928</td>
<td>10,659</td>
<td>10,093</td>
<td>11,252</td>
<td>10,781</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>
<td>2,926</td>
</tr>
<tr>
<td>Repackaged items</td>
<td>322</td>
<td>238</td>
<td>242</td>
<td>253</td>
<td><em>54,936</em></td>
</tr>
</tbody>
</table>

*This value represents the number of packs prepared unlike in previous years which reflected the type of items repacked.

### Table 2: Medicine Information Services activities from 2010–2014

<table>
<thead>
<tr>
<th>Activity</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enquiries</td>
<td>621</td>
<td>681</td>
<td>558</td>
<td>392</td>
<td>416</td>
</tr>
<tr>
<td>Adverse drug reaction reports</td>
<td>603</td>
<td>549</td>
<td>571</td>
<td>803</td>
<td>504</td>
</tr>
<tr>
<td>Poisoning reports</td>
<td>118</td>
<td>128</td>
<td>140</td>
<td>102</td>
<td>105</td>
</tr>
</tbody>
</table>
pared 446 TPN bags (11%) for the AFH leading to an additional income for SQUH of OR 28,990. The production of ready-made TPN bags for adults began at the end of 2013; a total of 339 (8.9%) were made which helped in reducing the workload.

The total number of prepared doses of cytotoxic preparations decreased by 4% with the preparation of 10,781 doses compared with 11,252 doses in 2013. The total number of patients receiving them was 683 [Figure 5]. Outside SQUH, we prepared 244 cytotoxic doses for the AFH.

**Medicine Information Services**

Medicine Information Services (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, ADRs and poisoning reports from 2010–2014.

MIS also provides the essential information base for SQUH’s Pharmacy & Therapeutics Committee meetings. In 2014, information was provided on more than 24 drugs, which led to the approval of 16 drugs and rejection of three requests which were all for the use of samples.
**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, intravenous fluids, narcotics and psychotropic drugs to hospital wards and units. It facilitates the control of expired products 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 cooperation with the main store and the Procurement Department. The Pharmacy Sub-Store is responsible for the supply of medicines on requisition for other satellite pharmacies and different clinics and units in the Hospital [Figure 6].

**Research**

**RESEARCH PROJECTS**

**Dabigatran and risk of bleeding**

**Code:** MREC #892  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Mrs. Amal Al-Rahbi, Dept. Pharmacy, SQUH.

Prevalence of and risk factors for colistin-associated nephrotoxicity in patients infected with multidrug-resistant Gram-negative pathogens at SQUH.

**Code:** MREC #920  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Moataz Mohamed, Dept. Pharmacy, SQUH.

Direct and indirect costs of cystic fibrosis patients at a university hospital in Oman.

**Code:** MREC #974  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Issa Al-Rashdi, Dept. Pharmacy, SQUH.

**RESEARCH PUBLICATIONS & BOOKS**

**Journal Publications**


Conference & Seminar Presentations

Conference Presentations

National

Poster Presentations

National

Seminar Presentations

National
1. Rose M. Pain management course. Sultan Qaboos University Hospital, Muscat, Oman, 22 Dec 2014.
The Department of Physiology has two divisions: Basic Physiology and Clinical Physiology located in the College of Medicine & Health Sciences (COM&HS) and the Sultan Qaboos 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 using hands-on methods, clinical students are taught 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 M.Sc. 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 with a cost-effective approach.

The Department lays major emphasis on research into cardiovascular and metabolic disorders, both basic and clinical. It has a 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

Deputy Head of Department
Mohammed Al-Abri, Senior Consultant

Faculty
Mohammed Hassan, Professor
Sulayma Al-Barwani, Associate Professor
Abdul A. Khan, Assistant Professor
Hajar Al-Rajaibi, Assistant Professor
Anmar A. Boudaka, Assistant Professor
Sami 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)
Jamila Al-Kalbani, Senior Technologist (CPH)
Nasra Al-Sinawi, Senior Technologist (CPH)
Thuraya Al-Zuhaibi, Senior Technologist (CPH)
Majeda Al-Raisi, Senior Technologist (CPH)
Nabila Al-Wadhahi, Senior Technologist (CPH)
Farid Al-Dhuhli, Superintendent (COM&HS)
Isehaq Hussaini, Biomedical Scientist (on study leave)
Hajer Ba-Omar, Research Assistant
Sultan Al-Siyabi, Research Assistant
Intisar Al-Lawati, Biomedical Scientist
Jessy George, Coordinator
Iluminada Calupig, Coordinator (CPH)

In addition, there are 32 technicians (of which 22 are Omani) in the support staff team working in the Cardiology, Pulmonology, Neurophysiology and Sleep Disorders laboratories.

Highlights of the Year 2014

Several research projects were carried out in physiology and clinical physiology in 2014 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 of the Department.

Apart from the addition of new diagnostic procedures, the number of existing clinical tests increased in all specialties, with some showing a substantial increase. Medical research also increased and results from various projects have been published.

Teaching Programmes

UNDERGRADUATE PROGRAMMES

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 the following courses: Structure-Function Relationship; Alimentary System; Uro-reproductive System; Cardiovascular System; Respiratory System; Human Nervous System; Endocrine System; Locomotor System; and the Integrated Modules I, II and III. The Department also teaches the following courses in the Nursing degree programme: Anatomy & Physiology 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.

Phase III Clinical Programme

In the Phase III clinical programme, the Department is involved in the teaching of the preclerkship, junior clerkship and senior clerkship programmes.

POSTGRADUATE PROGRAMMES

The Department offers M.Sc. and Ph.D. programmes. There is currently one student enrolled in the M.Sc. programme 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.

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. 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 COM&HS and SQUH programmes.
In-house training programmes are provided to the CPH technologists based on their specialty and their administrative responsibility—according to the courses offered by the SQUH Directorate of Training & Continuing Professional Development.

**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 CPH diagnostic services are fully functional to date. Many of the diagnostic areas have further improved their services.

A new electroencephalography (EEG) monitoring system was installed in 2014 and one new long-term monitoring (LTM) system for EEG was added. LTM services have been improved further. New pulmonary function testing equipment was received in 2013, also covering diffusion function, and continued to function to its fullest capacity in

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**Figure 1**: Total number of patients attending the Department of Clinical Physiology per month in 2014.

**Figure 2**: Types and number of patients per month in each section of the Department of Clinical Physiology in 2014.

CV = cardiovascular; PHY = physiology.

**Figure 3**: Number of patients per month undergoing cardiac catheterisation in 2013 and 2014.
Figure 4: The distribution of referrals per month to the Department of Clinical Physiology in 2014.
SQUH = Sultan Qaboos University Hospital.

Figure 5: Comparative analysis of the total number of investigations undertaken in the Department of Clinical Physiology from 2007 to 2014.

Figure 6: Comparative analysis of the total number of patients investigated in each section of the Department of Clinical Physiology from 2007 to 2014.
2014 for adult and paediatric patients. The Audiometry Unit was completely renovated in 2014. The implementation of the policy regarding reconfirming patients’ referral reasons, established in 2012, also continued in 2014.

The total number of patients attending CPH clinics during the year 2014 was 23,967. This is a 6% increase compared to 2013. The monthly distribution of procedures is shown in Figure 1. The greatest numbers of patients were observed in the months of December and April.

The cardiology service had the highest number of procedures (12,202), followed by audiology, neurology and pulmonary function tests [Figure 2].

The highest number of CPH procedures were in non-invasive cardiology (5,724), followed by audiology and newborn screening (5,267); echocardiography (4,745); invasive cardiology (1,733); pulmonary function tests (1,214); and polysomnography (547). Figure 3 shows the comparative distribution of invasive cardiology tests per month for 2013 and 2014.

Of all the patients seen during 2014 (23,967), there were 10,985 outpatients and 10,133 in-patients. A total of 2,770 patients were referred from hospitals other than SQUH (a 4% increase compared to 2013) [Figure 4].

Figures 5 and 6 depict the total number of patients investigated in the CPH Department in total and in each section from 2007 to 2014. There has been a significant and consistent increase in the number of patients investigated in the CPH in all sections.

Research

RESEARCH PROJECTS

Investigating the role of intracellular calcium in the maintenance of myogenic tone of aged coronary arteries

**Code:** RC/MED/PHYS/12/01  **Dates:** 2012–2015  **Value:** OR 83,700  **Funder:** The Research Council Oman

**Investigator:** Dr. Sulayma Al-Barwani, Dept. Physiology, SQU.

Interaction between ageing and exercise training in the regulation of coronary vascular tone: Role of intracellular calcium signalling and BKCa channels

**Code:** IG/MED/PHYS/11/01  **Dates:** 2011–2014  **Value:** OR 14,600  **Funder:** SQU

**Investigators:** Dr. Sulayma Al-Barwani, Prof. Mohammed Hassan, Ms. Hajer Ba-Omar, Mr. Sultan Al-Siyabi, Dept. Physiology, SQU.

Studies on the effect of TRPV4 stimulation on atrial natriuretic peptide (ANP) and B-type natriuretic peptide (BNP) blood levels in rats

**Code:** IG/MED/DEAN/14/01  **Dates:** 2014–2015  **Value:** OR 2,000  **Funder:** SQU

**Investigators:** Dr. Ammar Boudaka, Dept. Physiology, SQU; Mr. Masoud Kashoub, Mr. Salim Kashoub, COM&HS Students, SQU.

Sleep patterns and cardiometabolic risk in Omani adults

**Code:** MREC #878  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Prof. Mohammed Hassan, Dept. Physiology, SQU.

Daytime sleepiness and fatigue and risk cognitive impairment among vehicle drivers in Oman

**Code:** MREC #963  **Dates:** 2014–2015  **Value:** Unfunded  **Project Approval:** SQU

**Investigator:** Dr. Mohammed Al-Abri, Dept. Physiology, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentation

International


National

1. Al Abri M. Sleep apnea and restricted sleep patterns: Impact on cardiometabolic health. Cardiometabolic Risk Symposium, Oman Society of Lipid and Atherosclerosis (OSLA), Sultan Qaboos University, Muscat, Oman, 15 Mar 2014

Poster Presentation

International


THESIS SUPERVISION

Student Name: Amina S. M. Al-Malki
Qualification: B.Sc
Title: Assessment of inactivity and socioeconomic factors contributing to obesity in 7–12 years old Omani children
Supervisor: Prof. Mohammed Hassan
Date of completion: On-going

Student Name: Halima N. Al-Dhali
Qualification: B.Sc
Title: Association of obesity with diet among Omani schoolchildren
Supervisor: Prof. Mohammed Hassan
Date of completion: On-going

Student Name: Azahaar Z. S. Z. Al-Abri
Qualification: B.Sc
Title: The role of transient receptor potential channel vanilloid 4 in mediating atrial natriuretic peptide release from the heart in mice
Supervisor: Dr. Ammar Boudaka
Date of completion: On-going

Student Name: Jawaher H. N. Al-Gafri
Qualification: B.Sc
Title: The role of the transient receptor potential vanilloid 4 in mediating brain natriuretic peptide (BNP) release from the heart in mice
Supervisor: Dr. Ammar Boudaka
Date of completion: On-going

Student Name: Omayma T. M. H. Al-Kiyumi
Qualification: B.Sc
Title: Levels of plasma atrial and brain natriuretic peptides in normotensive and spontaneously hypertensive rats
Supervisor: Dr. Ammar Boudaka
Date of completion: On-going
The Department covers three different disciplines: physiotherapy; occupational therapy (OT); and speech and language therapy (SLT). Physiotherapy views human movement as central to the health and well-being of individuals. Physiotherapists identify and maximise movement potential through health promotion, preventative healthcare, treatment and rehabilitation. OT helps clients who have orthopaedic, neurological and psychiatric handicaps to live a normal life. Surgical and chronically-ill patients can also benefit from this type of therapy. SLT is concerned with improving clients’ communication skills.

Physiotherapy services cover inpatient, outpatient, emergency and day care patients. Services are available seven days a week in all 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 involved in clinical teaching of physiotherapy and medical students.

OT services include home modifications, adaptive devices, splinting and help to improve patients’ oral motility, cognitive skills and learning disabilities. Adaptive devices are advised or provided to compensate for any disability and improve patients’ functional ability. OT aims to enable clients to reach their maximum level of functional independence in all activities of daily living (ADL) so as to enable them to become independent members of society. In paediatric cases, 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 difficulties) are tackled so as to bring the child’s development to as normal a level as possible. Treatments include family counselling and home programmes.

SLT services provide assessments, management and treatment for a wide range of cases related to hearing impairments; cognitive or other developmental delays; birth defects such as cleft lip and/or palate; motor planning problems; dysphagia; traumatic brain
jibilities; neurological problems affecting communication; or voice disorders. In addition, speech and language therapists supervise SLT students during their training in Sultan Qaboos University Hospital (SQUH). Furthermore, great efforts are made to educate other professionals (e.g. physicians, dieticians and nurses) about SLT. 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
Zuwaïna Al-Bahri, Chief Physiotherapist-B
Ahlaam Al-Mazrui, Chief Physiotherapist-B
Huda Al-Saadi, Chief Physiotherapist
Hilal Al-Rashdi, Senior Physiotherapist
Najma Al-Mahrûqi, Senior Physiotherapist
Madîla Al-Kindi, Senior Physiotherapist
Hasna Al-Rashdy, Senior Physiotherapist
Aisha Al-Talei, Senior Physiotherapist
Safiya Al-Hashmi, Senior Physiotherapist
Sabah Al-Toûqi, Senior Physiotherapist
Moza Al-Amri, Senior Physiotherapist
Shaïma Al-Saïdi, Physiotherapist
Hammed Al-Subhi, Physiotherapist
Mahmoud Al-Hinai, Physiotherapist
Halima Al-Mahroqi, Physiotherapist
Hilal Al-Balushi, Physiotherapist
Fatihya Al-Harthî, Physiotherapist
Mohamed Al-Shamli, Physiotherapist
Mohamed Al-Hinai, Physiotherapist
Kamla Al-Qasmi, Physiotherapist
Inas I. Ali, Physiotherapist
Sumaiya Al-Mahrizi, Physiotherapist
Said Al-Yaarobi, Physiotherapist
Senthikumar Ravindran, Physiotherapist
Ibîtisam Al-Wardi, Senior Speech & Language Therapist
Fatihya Al-Amri, Speech & Language Therapist
Zahra M. Mohsin, Speech & Language Therapist
Salma Al-Busaidi, Speech & Language Therapist
Authaima A. Al-Farsi, Occupational Therapist
Fatima Francisco, Occupational Therapist

Support Staff
Fatihya Al-Akhzami, Coordinator
Hamood Al-Amri, Messenger
Nasser Al-Ruzaïqî, Receptionist
Raja H. A. Baqi, Medical Orderly

Highlights of the Year 2014

In OT services, a new occupational therapist, Ms. Fatima Francisco, joined the Department of Physiotherapy & Rehabilitation in March 2014. In SLT services, a new speech therapist, Ms. Salma Al-Busaidi, joined the Department in May 2014. Five senior members of staff resigned in 2014, including Mr. Kauther Al-Busaidi, Mr. Sabah Al-Toûqi, Ms. Safiya Al-Hashmi, Ms. Moza Al-Amri and Ms. Ibîtisam Al-Wardi.

Services

The Department continued conducting the monthly Lifting & Moving Course for nurses in cooperation with staff from the Directorate of Training & Continuing Professional Development (DTCPD). This course aims to educate nurses and paramedics on the correct way of lifting, utilising ergonomic and biomechanical techniques. It has three components: manual handling, biomechanics and hands-on practical sessions. By the end of the course, all attendees should be able to perform the lifting techniques safely and correctly in seven different case scenarios.

In addition, the Department continued conducting the Parent-Infant Massage Course (parent-infant bonding and attachment). The classes are 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, secures attachment and encourages 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, colic, constipation and growing pains. By achieving the four principles, relaxation will be achieved and babies will have better sleeping patterns and more enjoyable play times.

The SLT 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 injuries; 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 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.
The Department published two issues of the Rehabilitation Newsletter in 2014. The Department held its annual Rehabilitation Event, focusing mainly on pediatrics, entitled “Let’s Communicate”. The event highlighted the importance of communication, paediatric speech and language problems and increased awareness of children's rights, particularly those of children with special needs. This theme also fueled two additional events, including an exhibition at a shopping centre and an open rehabilitation exhibition in SQUH in April 2014.

CONTINUING PROFESSIONAL DEVELOPMENT

During 2014, members of staff participated in or attended the following training courses and conferences: the Acupuncture Course held in Saudi Arabia from the 27 February–1 March 2014; the Sensory Integration Course organised by the DTCPD from the 20–23 February 2014; the American Heart Association Heart Course organised by the DTCPD on the 26 March 2014; the Sensory Integration and Praxis Tests Course held from 20–23 February 2014; the Related Physiotherapy for Urinary Incontinence Course as part of the 2nd National Conference of the Omani Society of Obstetrics & Gynaecology - Women's Health in Menopause, held in Muscat, Oman, on 21 April 2014; the Sports Related Imaging Course as part of the 7th Arabian Gulf Society of Skeletal Radiology Annual Meeting, held in Muscat, Oman, from 16–17 February 2014; the Arab-German Orthopaedic & Trauma Rehabilitation Symposium at the University Cultural Centre on 27 February 2014; the Arab Health Conference, Oman, from 29–31 January 2014; multidisciplinary medical team meetings; the SQUH Open Day on 23 April 2014; the Ontario Physiotherapy Association Vestibular Rehabilitation Course held in Oman from 7–8 May 2014; the Pelvic Pain Management Course held in Ibri Hospital, Oman, from 17–18 April 2014; the International Conference on Communications organised by the Directorate of Information Systems, on 17 April 2014; and the 6th Jordanian Society of Physical Medicine, Arthritis & Rehabilitation and the 8th Pan Arab Congress in Physical Medicine & Rehabilitation Conference held in Amman, Jordan, from 12–16 May 2014.

Members of staff participated in one-month clinical attachments in 2014. Ms. Shaima Al-Saidi was a clinical attaché in the Gill Heart Institute, Lexington, Kentucky, USA. Mr. Mohamed Al-Shamli was a clinical attaché in paediatric musculoskeletal physiotherapy in University College London, UK. Mr. Hammad Al-Subhi was a clinical attaché in a neuro-rehabilitation and physiotherapy centre in the UK. Mr. Mahmoud Al-Hinai was on an observership placement in Toronto General Hospital, Canada.

Teaching Programmes

UNDERGRADUATE 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 2014, one physiotherapist from India visited the Department for a four-month observation period from 12 October 2014 onwards.

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 2014 issue were: Carpel Tunnel Syndrome; Constraint-Induced Movement Therapy: A clinical perspective; Fear Avoidance; and Tampa Scale of Kinesiophobia.

Department staff ran training courses and workshops for SQUH and other hospitals in 2014 on the following two topics: Role of Physiotherapy in the Elderly and Sensory Integration.

The Lifting & Moving Course for nurses and medical orderlies in the SQUH DTCPD programme was conducted once a month in the Department by physiotherapists. Lectures were given in the DTCPD 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 in 2014 is shown in Table 1.

<table>
<thead>
<tr>
<th>Service</th>
<th>Inpatients</th>
<th>Outpatients</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiotherapy</td>
<td>24,683</td>
<td>19,933</td>
<td>44,616</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>1,632</td>
<td>2,254</td>
<td>3,886</td>
</tr>
<tr>
<td>Speech and language therapy</td>
<td>1,257</td>
<td>4,571</td>
<td>5,828</td>
</tr>
</tbody>
</table>
Research

Conference & Seminar Presentations

Conference Presentations

National

Seminar Presentations

National
3. Al-Riyami S. Physiotherapy exercise persecution. Sultan Qaboos University Hospital, Muscat, Oman, 14 Nov 2014.
5. Al-Riyami S. Course in medical taping concept (MCT1). Nizwa Hospital, Nizwa, Oman, 27–28 Sep 2014.
7. Al-Riyami S. Introduction to acupuncture in musculoskeletal pain managements. Sultan Qaboos University Hospital, Muscat, Oman, 27 Feb–1 Mar 2014.
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 and residents. The Department’s goal is to provide the highest quality of patient care with predictive, diagnostic and therapeutic imaging-based approaches. The Department offers specialized diagnostic services and operates state-of-the-art outpatient, inpatient and emergency imaging services. These include magnetic resonance imaging (MRI), digital subtraction angiography, nuclear medicine, computed tomography (CT), ultrasonography (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 digitized since May 2002 following the installation of a complete picture and archiving communication system (PACS). Radiological examinations and reports can be viewed by all doctors from any computer outlet on the internal web system at Sultan Qaboos University Hospital (SQUH). The PACS/radiology information system was replaced with a new system (Philips PACS/RIS: iSite/XIRIS) in May 2011. The new system has several significant improvements in functionality, storage and accessibility over the previous system. The most notable features are: integration with hospital information systems 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 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 Sultan Qaboos University as well as the community at large. The Medical Physics services include thermoluminescent dosimeter (TLD) radiation protection for many institutions in Oman, as well as teaching and the checking of radioactivity in other resources. In addition to diagnostic services, the
Ultrasound Section

This section has a high workload. Examinations include breast US which is performed in the General Radiology 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.

Vascular & Interventional Radiology Section

This section has acquired a new angiography system (Philips Clarity FD 20/20), the second of its kind in the Middle Eastern and Gulf region. The interventional radiology room is the first hybrid suite in Oman. This section has pioneered new interventional endovascular treatments in the country, such as endovenous ablation and mechanical thrombectomy.

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) varicoceles embolisation; (11) endocrine tumour 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 of the diagnostic and interventional percutaneous non-vascular procedures, such as: (1) thoracoabdominal, hepatobiliary, renal, gastrointestinal, transplant organ and soft tissue drainages, dilations and stents; (2) arterial and hepatic biopsy and ablations; (3) transhepatic cholangiograms; (4) biliary stenting; (5) nephrostomy; (6) ureteral stenting; and (7) gastrostomy and gastroenterostomy.

The interventional radiology team consists of three vascular interventional radiologists and one neuro-interventional radiologist. The section is served by six technologists and 10 nurses that are shared between the Department and the Cardiac Catheter Laboratory. The section has admitting privileges in the Day Care Unit two days a week.

General Radiology & Mammography Section

The clinical mission of this section is to provide individually tailored comprehensive evaluation for the early detection and diagnosis of breast diseases. The section offers state-of-the-art dedicated breast imaging modalities which include full field digital mammography and dedicated breast ultrasounds. Other services include stereotactic-guided biopsy and stereotactic hook wire localisations. US-guided interventional procedures such as US-guided biopsies, hook wire localisations, fine needle aspiration cytology and clip placements are some of the other procedures provided.

A ‘One-stop Breast Clinic’ is held once a week at SQUH in collaboration with surgeons and pathologists. The aim is to achieve a 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.

Radiology & Molecular Imaging
Nuclear Medicine Section

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 examination time in many types of studies, such as myocardial perfusion for the detection of coronary artery 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.

Medical Physics Section

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, 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. the Ministry of Defense, Technical Inspection Services and Muscat Private Hospital). The badges are worn for one calendar month and then read by the Department’s 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. A set of two personnel radiation dosimeters (red and blue) per individual are issued monthly to ensure that workers will not be without dosimeters during the period of TLD reading.

Radiation-measuring instruments should be calibrated annually, sometimes more frequently depending on the instrument and its use. The RPS provide calibration and maintenance services for portable radiation survey instruments (Mini900, Mini1000, Ludlum) used in SQU/SQUH, external organisations and industries throughout Oman (e.g. the Ministry of Environment & Climate Affairs, Petroleum Development of Oman, Shaleem Petroleum, Midwesco and Halliburton). Details about the calibration, the date of the performed calibration and the next due calibration are made available on every instrument.

Annual 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 QC tests on an annual basis to identify concerns 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. QC information is available on every machine.

Medical physicists provide support to the Radiation Therapy Unit 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. They also regularly survey the public area situated above the delays tanks.

Liquid and solid radioactive waste from the Nuclear Medicine section and the iodine-131 (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 the 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 the University for radionuclides originating from the 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 identified naturally-occurring radioactive material 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-Dhuhi, Senior Consultant

**Faculty**  
Lamk Al-Lamki, Professor  
Neela Al-Lamki, Professor  
Ibrahim I. Suliman, Assistant Professor  
Dilip Sankhla, Senior Consultant  
Samir Hussein, Senior Consultant  
Sukhpal Sawhney, Senior Consultant  
Haddia Bererhi, Senior Consultant  
Rashid Al-Sukaiti, Senior Consultant  
Anupam Kakaria, Consultant  
Sameer B. Raniga, Consultant  
Alaa Manzalawy, Senior Specialist  
Rana S. Hamid, Senior Specialist  
Amna Al-Jabri, Demonstrator  
Badriya Al-Qassabi, Senior Specialist (Resident)  
Eiman Al-Ajmi, Senior Specialist (Resident)  
Khulood Al-Riyami, Specialist (Resident)  
Saleh Al-Baawain, Senior House Officer (Resident)  
Yarab Al-Bulushi, Senior House Officer (Resident)

**Technical Staff**  
Ahmed Al-Shuahaimy, Departmental Superintendent  
Per Rude, Deputy Superintendent, Senior Chief Radiographer A  
Antonio Velarde, Chief Technologist-A  
Editha San-Diego, Chief Technologist-B  
Manuel Gaerlan, Chief Technologist-B  
Arthur De Guzman, Chief Technologist-B  
Meda Bersaba, Senior Technologist-A  
Ahmed Abdou, Senior Technologist-A  
Abdullah Al-Siyabi, Senior Technologist-A  
Adnan Al-Kharousi, Senior Technologist-A  
Mahmood Al-Abri, Senior Technologist-B  
Faiza Al-Salimi, Senior Technologist-A  
Umaima Al-Ajmi, Senior Technologist-A  
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Mohammed Al-Saqri, Senior Technologist-B  
Nabila Al-Hesani, Senior Technologist-B  
Ahmed Al-Shuahaimi, Senior Technologist-B  
Sultan Al-Naamani, Senior Technologist-B  
Hamoud Al-Ghafri, Senior Technologist-B  
Rania El-Tigani, Senior Technologist-B  
Ruqaya Al-Rawahi, Senior Technologist-B  
Luz Solo-Esguerra, Senior Technologist-B  
Rabia Al-Mahrouqi, Senior 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  
Nawal Al-Kharusi, Senior Technologist-B  
Vinod Raj, Senior Technologist-B  
Ramachandran Murugesan, Senior Technologist-B  
Prathap J. Wesley M. V., Senior Technologist-B  
Aida Al-Rabbi, Technologist-A  
Hanan Al-Qassabi, Technologist-A  
Khitam Al-Hijri, Technologist-A  
Lubna Al-Esry, Technologist-A  
Mathew George, Technologist-A  
Kalthoom Al-Shesawi, Technologist-A  
Victor Arulnathan, Technologist-A  
Unnikrishnan Nair, Technologist-A  
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  
Devid Devaraj, Technologist-A  
Moath Al-Jabri, Technologist-B  
Alya Al-Jandalani, Technologist-B  
Dalal Al-Shabibi, Technologist-A  
Medussa Samar, Senior Technologist-B  
Amani M. Saif, Senior Technologist-B  
Ruqaya A. Ali, Technologist-A  
Muna Al-Muqbal, Technologist-A  
Abdullah Al-Azwan, Technologist-A  
Muzna Al-Harthy, Technologist-B

**Medical Physics**  
Ibtissam Al-Maskery, Medical Physicist  
Amaal Al-Rasbi, Medical Physicist  
Hilal Al-Zeheimi, Medical Physicist  
Naima Al-Naimani, Medical Physicist  
Mohammed Al-Subhi, Coordinator

**Support Staff**  
Rhodora Campo, Coordinator  
Lddie Lara, Coordinator  
Jeraldine Arante, Coordinator  
Fatma Al-Bahrani, Coordinator  
Wafa Al-Qassabi, Coordinator  
Mohammed Al-Farai, Clerk  
Khamis Al-Farsi, Clerk  
Said Al-Abri, Medical Orderly  
Fatma Al-Kharboosi, Medical Orderly  
Mutassim Al-Husaini, Medical Orderly

**Nursing Staff**  
Warda S. Al-Lawati, Nurse  
Bindu V. P., Nurse  
Marichu Lorica, Nurse  
Bini Prathapan, Nurse  
Lenny Netto, Nurse  
Sonya Dominic, Nurse  
Aleyamma Lalu, Nurse
Nusrat Rizvi, Nurse
Choong L. Joo, Nurse
Mahmood Al-Maani, Nurse
Minu Kurian, Nurse
Hassan Al-Riyami, Nurse

Highlights of the Year 2014

An ultrasound workshop organised by the Department was held during the 7th Arabian Gulf Society of Skeletal Radiology Meeting on 15 February 2014 at the Armed Forces Hospital, Muscat, Oman.

In 2014, transcranial Doppler imaging (TCDI) was introduced for patients with severe haemoglobinopathy. Several TCDI awareness days for both paediatric and adult patients were successfully held.

Teaching Programmes

UNDERGRADUATE PROGRAMME

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 Human & Clinical 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 Diseases; and Uro/Nephrology.

Clinical Programme

In Phase III of the curriculum, the Department provides a rotation for 6th year medical 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 preclinical 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 they start practising.

Table 1: Radiology and molecular imaging examination workload in 2014

<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>48,267</td>
</tr>
<tr>
<td>Special procedures (fluoroscopy-guided procedures)</td>
<td>1,226</td>
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<tr>
<td>Ultrasound (including ultrasound-guided interventions)</td>
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<tr>
<td>Computed tomography (including CT guided interventions)</td>
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<tr>
<td>Vascular and interventional procedures (including operating theatre procedures)</td>
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<tr>
<td>Nuclear medicine</td>
<td>2,575</td>
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<tr>
<td>Bone densitometry</td>
<td>352</td>
</tr>
<tr>
<td>Magnetic resonance scanning</td>
<td>3,499</td>
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<tr>
<td>Mammography</td>
<td>1,001</td>
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<tr>
<td>Oral health</td>
<td>2,498</td>
</tr>
<tr>
<td>Lithotripsy</td>
<td>164</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>86,781</strong></td>
</tr>
</tbody>
</table>

For approximately 30 7th year medical students, the Department contributes to an 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.

Figure 1: Examinations performed in 2014 by type.
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 examination.

Clinical & Diagnostic Services

In 2014, the Department performed 86,781 examinations compared to 84,235 in 2013. The details of these examinations are shown in the Table 1 and Figures 1 & 2. A total of 12,644 US examinations were performed in the Department in 2014, compared to 12,661 examinations in 2013.

Research

Research Projects

Performance testing and quality control of equipment used in digital and interventional radiology

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<tr>
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<tr>
<td>Investigator: Dr. Ibrahim Suliman, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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Retrospective study of adult patient dose in diagnostic radiology using dosimetry software

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<tbody>
<tr>
<td>Project Approval: SQU</td>
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<tr>
<td>Investigator: Dr. Ibrahim Suliman, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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The incidence of malignancy in sonographically benign-appearing breast masses in young Omani women: Can fine needle aspiration cytology (FNAC) or biopsy be avoided?

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<tr>
<td>Investigator: Dr. Sukhpal Sawhney, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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Endovascular repair of traumatic, degenerative and mycotic aortic aneurysms: A single centre experience

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<td>Investigator: Dr. Rashid Al-Sukaiti, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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Comparison of sensitivity and specificity of different parathyroid scintigraphy and other radiological studies in pre-operative localisation of parathyroid adenoma: A retrospective study - the experience in Oman

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<td>Investigator: Dr. Samir Hussein, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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Volumetric measurement of ureteric stones: Does it predict surgical intervention?

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<tr>
<td>Investigator: Dr. Humoud Al-Dhuhli, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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Ultrasound of thyroid nodules: Validating the Society of Radiologists in Ultrasound (SRU) recommendations

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<tr>
<td>Investigator: Dr. Sameer Raniga, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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Comparison of cardiac function and wall motion using cardiac computed tomography (CT), nuclear medicine and echocardiography

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<tbody>
<tr>
<td>Project Approval: SQU</td>
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<tr>
<td>Investigator: Dr. Humoud Al-Dhuhli, Dept. Radiology &amp; Molecular Imaging, SQU.</td>
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</tbody>
</table>
Research Publications & Books

Journal Publications


Conference Presentations

International

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**
Hani Al-Qadhi, Senior Consultant

**Assistant Head of Department**
Khalifa Al-Wahaibi, Senior Consultant

**Hospital Staff**
Abdullah Al-Harthy, Senior Consultant (Trauma)
Adil Al-Ajmi, Senior Consultant (General)
Nayil Al-Kindy, Senior Consultant (General)
Norman Machado, Senior Consultant (General)
Pradeep Chopra, Senior Consultant (General)
Rashid Al-Abri, Senior Consultant (ENT)
Suresh Pillai, Senior Consultant (ENT)
Joseph Mathew, Senior Consultant (Urology)

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 Al-Ameddine, Senior Consultant (Cardiothoracic)
Mohamed Khalid, Senior Consultant (Orthopaedic)
Sultan Al-Maskari, Senior Consultant (Orthopaedic)
Mahmood H. Sherif, Senior Consultant (Paediatric Surgery)
Zainab Al-Balushi, Senior Consultant (Paediatric Surgery)
Rajeev Kariyattil, Senior Consultant (Neurosurgery)
Unnikrishnan M., Senior Consultant (Neurosurgery)
Edwin Stephen, Senior Consultant (Vascular)
Sreedharan V. K., Consultant (General)
Mohammed Al-Hashmi, Consultant (Endocrine)
Mohammed Al-Okbi, Consultant (ENT)
Annual Report 2014

ACADEMIC AND PATIENT CARE DEPARTMENTS

Highlights of the Year 2014

The Department was divided into five specialty-based divisions: Breast/Surgical Oncology; Hepatobiliary & Pancreatic Surgery; Trauma & Minimally Invasive Surgery; General Surgery; and Vascular Surgery.

In 2014, daily circumcision procedures were performed in the Obstetrics & Gynaecology ward, instead of the Daycare ward, which dramatically reduced the workload of the Outpatient and Daycare wards.

A ground-breaking cardiothoracic surgery, the implantation of an artificial left ventricular assist device which takes over the pumping function of the left ventricle of the heart, was successfully performed for the first time in Oman. This surgery was led by Dr. Hilal Al-Sabti and the cardiothoracic team at the Sultan Qaboos University Hospital (SQUH). Dr. Alghalya Al-Maawali received an award of distinction in the Master’s of Science programme for her Surgery degree at the University of British Columbia in Canada.

The Department of Surgery organised an event to commemorate the former Head of Department, Professor Chris Grant, on the first anniversary of his death. The event, known as Prof. Grant’s Day, took place on 11 October 2014 at the Diplomatic Club in Muscat. As a result of the continuous collaboration and mutual understanding between the Department of Surgery at Sultan Qaboos University (SQU) and the University of British Columbia, Dr. Daniel Philip Jenkin, a graduate from the University of British Columbia, was accepted to do a three-month endoscopic retrograde cholangiopancreatography fellowship at SQU. This is the first time that a Canadian surgical graduate has done a fellowship in a Middle Eastern country.

Teaching Programmes

UNDERGRADUATE PROGRAMMES

Preclinical Programme

The Department was involved in the new course in Phase III of the new curriculum (the pre-internship rotation).

Clinical Programme

The Department participated in the teaching for the junior clerkship rotation, catering for 96 students in 2013–2014. The students rotated in groups of 15–17; each group spent two weeks each at SQUH, the Royal Hospital and Khoula Hospital. Students at Khoula Hospital for the Surgery...
rotation were transferred to the Armed Forces Hospital in October 2014. For the preclerkship rotation, the Department catered to 114 students in 2014. The students rotated in groups of 18–20 and spent their 10-week rotation at SQUH only. There were 117 students undertaking their senior clerkship rotation in groups of 17–23. Each group spent two weeks in the Ear, Nose & Throat Unit and three weeks in the Department of Surgery as part of their Surgery & Allied block.

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.

**POSTGRADUATE PROGRAMMES**

**Internships**

A total of 57 interns undertook their surgical rotations in the Department in the year 2014.

**Oman Medical Specialty Board Residents**

For the Oman Medical Specialty Board (OMSB) Residency programme, 19 surgical residents and 11 non-surgical residents undertook their rotations in general surgery in the Department in the 2014 academic year. A total of 48 weekly lectures for the senior residents and another 48 weekly lectures for junior residents were delivered.

**Training Courses & CME Activities**

Dr. Khalifa Al-Wahaibi organised the Basic Surgical Skills Course which was held in January 2014 at the College of Medicine & Health Sciences and in September 2014 at the College of Nursing. Dr. Adil Al-Ajmi organised the 3rd European-Asian Mastology Breast Cancer Congress held at the Al Bustan Palace Hotel between 29–30 October 2014. Dr. Sultan Al-Maskari organised the Cadaveric Instructional Course on the Management of Open Tibial Fractures at the SQU Al Faham Cultural Centre between 30 November to 2 December 2014. Dr. Pradeep Chopra delivered a lecture at SQUH for nurses titled “Physiology of wound healing and which dressing to choose” at Wound Study Day on separate occasions during the year.

**Research**

**RESEARCH PROJECTS**

**Outcome of acute abdomen in adults admitted to the Sultan Qaboos University Hospital: A prospective study**


*Investigator: Dr. Sreedharan K., Dept. Surgery, SQU.*

**Experience of paediatric thoraco-abdominal injuries at SQUH**


*Investigator: Dr. Khalid Bhatti, Dept. Surgery, SQU.*

**Interaction of human tendon fibroblasts with orthopaedic bio-materials**


*Investigator: Dr. Mohamed Khalid, Dept. Surgery, SQU.*

**Differentiate infected bone (osteomyelitis/septic arthritis) from infarcted bone in sickle cell disease patients using Raman spectrometry**


*Investigator: Dr. Mohamed Khalid, Dept. Surgery, SQU.*

**Comparison of drain versus no-drain in postoperative thyroidectomy and a retrospective case-control study conducted in SQUH (2011–2013) in Oman**


*Investigator: Dr. Hani Al-Qadhi, Dept. Surgery, SQU.*

**Prevalence of breast disease among patients attending SQUH from January 2009 to May 2014**


*Investigator: Dr. Adil Al-Ajmi, Dept. Surgery, SQU.*

**Validation of potential biomarker for the diagnosis/treatment of metastatic breast cancer within Omani females**


*Investigators: Dr. Sirin Adham, Dept. Biology, College of Science, SQU; Dr. Adil Al-Ajmi, Dept. Surgery, SQU.*

**Research Publications & Books**

**Journal Publications**


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

International


3. Al-Qadhi H. Career planning, the glass ceiling and doctor’s life on-line. Heart Disease Overview and Updates Conference, Kuwait, 18–20 Sep 2014.


National


Poster Presentations

International


Support Departments

**College**
- Medical Library
- Medical Education & Informatics Unit

**Hospital**
- Directorate of Development & Quality
- Directorate of Hospital Information Systems
- Department of Procurement
- Directorate of Patient Services
- Directorate of Public Relations & Information
- Directorate of Technical Affairs
- Directorate of Training & Continuing Professional Development
- Department of Finance
- Department of Housing
- Department of Medical Records
- Department of Transport
The main thrust of our library policy has always been the evaluation and development of the Medical Library (ML) resources and 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 (COM&HS), College of Nursing and Sultan Qaboos University Hospital (SQUH), especially in respect to research activities.

Staff

Director
Mohammed S. Al-Wardi

Deputy Director
Mariam S. Al-Sinani

Librarians
Mohammed K. Al-Higgi, Chief Librarian-A
Huda H. Al-Farsi, Chief Librarian-A
Huda S. Al-Haddabi, Chief Librarian-A
Saif A. Al-Muharbi, Senior Librarian-B
Abdulla S. Al-Hinai, Librarian
Jassim M. Al-Hasani, Librarian
Saif A. Al-Abri, Librarian
Khadija A. Al-Yahyai, Assistant Librarian
Khadija H. Al-Yahyai, Assistant Librarian
Zakiya S. Al-Manwari, Assistant Librarian

Support Staff
Ahmed S. Al-Ghafri, Graphic Camera Operator
Amal M. Al-Hashami, Clerk
Hanan S. Al-Jashami, Clerk
Sultan Al-Shereiqi, Coordinator

Highlights of the Year 2014

Circulation
In this period, the total number of checked-out materials was 1,268 as compared to 1,508 in 2013. The number of users decreased this year from 4,896 users in 2013 to 4,848 in 2014. Also, the number of external users increased from 58 in 2013 to 75 in 2014. Moreover, the number of orientation groups decreased to four groups in 2014 in comparison to 11 groups in 2013. Finally, the number of users from the Oman Medical Specialty Board (OMSB) decreased to 127 in 2014 in comparison to 147 in 2013.

Acquisitions
In 2014, 154 new book titles were added to the ML collection. This number was made up of 82 books received from the COM&HS, 22 monographs received as gifts, 35 books received from the Ministry of Health in Oman, the World Health Organization and others. In addition, 15 theses were received from the COM&HS.

Serial Department
The number of subscriptions to print journals decreased from 69 in 2013 to 63 in 2014. On the other hand, electronic journal subscriptions increased from 191 in 2013 to 194 in 2014 as we move gradually to using electronic journals. The number of database subscriptions remained the same at four databases. Moreover, the ML received a total of 68 batches of issues, with a total of 881 issues, from EBSCO in 2014. A total of 39 journals from the Gulf Cooperation Council Region were received gratis. In 2014, the ML sent one batch of books for binding; these included 150 volumes with 740 issues at a total cost of binding of OR 690.

Interlibrary Loans
The total number of requested articles from different libraries by the ML was 90. The number of articles sent to different libraries was 520. A total of 190 articles were requested by different departments from the COM&HS and SQUH. In addition, 35 articles were requested by the OMSB and 23 articles were requested by postgraduate students.

Training of Library Users
A total of 140 students were trained to use the library. Of these, 20 students were from the COM&HS, 50 students were from the Language Centre, 18 students were from the SQUH Central Sterile Supply Department, two students were from the Library Science & Information Department of the College of Arts & Social Sciences and 50 students were from other departments and institutions.

E-Resources Statistics
Tables 1 & 2 below show the number of bibliographic database searches performed and the number of full-text articles downloaded in 2014.

Information Technology Services
In 2014, 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 British Medical Journal group and Taylor Francis Online. Databases such as MEDLINE, CINHAL, Biological Abst, Access Medicine and ISI Web of Knowledge as well as two book database (e-brary and e-books) could also be accessed through our website.

Staff Development

Conferences & 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. Jassim Al-Hasani...
### Table 1: Searches performed in bibliographic databases in 2014

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<th>Jul</th>
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<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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<td>29</td>
<td>118</td>
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### Table 2: Full text downloads from e-journals in 2014

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attended a workshop on open source software applications in Malaysia from 17–20 March 2014; (2) Mr. Mohammed Al-Wardi, Mr. Mohammed Al-Higgi and Mr. Amal Al-Hashami attended the Special Libraries Association’s (SLA) 20th Annual Conference in Enhancing the Digital Knowledge Society’s Information Needs in Doha, Qatar, from 24–27 March 2014; (3) Mr. Mohammed Al-Wardi, Mr. Mohammed Al-Higgi, Mr. Abdulla Al-Hinai and Mr. Sultan Al-Shereiqi attended a symposium titled ‘Medical knowledge under microscope: The hidden role of the medical librarian’ at Al-Masarra Hospital, in Muscat, on 8 April 2014; (4) Mr. Mohammed Al-Wardi and Mr. Abdulla Al-Hinai attended a symposium titled ‘Copyrights’ organised by the Oman Chamber of Commerce in Muscat from 22–23 April 2014; (5) Ms. Huda Al-Haddabi attended a workshop titled ‘RAD’ held in the ML from 27–30 April 2014; (6) Mr. Mohammed Al-Higgi, Ms. Zakiya Al-Manwari and Ms. Khadija Al-Yahyai attended a symposium titled ‘Health information overload: Challenges and solutions’ at the Royal Hospital, Muscat, from 15–16 October 2014; and (7) Mr. Abdulla Al-Hinai attended the 25th Conference of the Arab Federation for Libraries & Information held in Tunisia from 27–31 October 2014.

**Plan for the Future**

The ML plans to replace approximately 300 to 500 books every year in an attempt to renew all of the old books and editions of books. Moreover, we plan to digitise our audio and video collection; approximately 1,300 video tapes exist in the current ML collection. For these purposes, we need two more members of staff holding a minimum qualification of a diploma in computer science.
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 (COM&HS). The Unit has a full-time staff, but draws mainly on the voluntary participation of staff from different departments of the COM&HS 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 COM&HS, the Sultan Qaboos 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 International Databank for Enhancement of Assessment and Learning (IDEAL) 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 (CLS) plays a very active role in the COM&HS as it is equipped with a variety of instruments, simulators and manikins 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 COM&HS 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
Yousef Al-Weshahi, Assistant Professor, Medical Education
Ibrahim Inuwa, Associate Professor, Human & Clinical Anatomy
Muna Al-Saadoon, Assistant Professor, Child Health

Syed Rizvi, Assistant Professor, Family Medicine & Public Health
Samir Hussein, Senior Consultant, Radiology & Molecular Imaging
Omar Al-Hussaini, Ministry of Health
Laila Al-Zadjali, Ministry of Health

Support Staff
Buthaina Baqar, Counselling Guidance Specialist
Hisham A. Hadi, College IDEAL Administrator
Moosa Al-Rawahi, e-Learning/e-Assessment Multimedia Designer
Salim Al-Harthi, Programmer
Almaqdad Al-Lawati, Systems Analyst
Somaya Al-Shuraqi, Systems Analyst
Bader Al-Ismaili, Computer Technician
Talal Al-Kindi, Computer Technician
Aida Al-Hajri, Computer Technician
Thuraiya Al-Batashi, Computer Technician
Nooriya Al-Rawahi, Computer Technician
Taha M. El-Sayed, Chief Technician, CLS
Ahmed Al-Hadrami, Technician, CLS
Rahima Al-Maashari, Technician, CLS
Asila Al-Harth, Coordinator

Highlights of the Year 2014

Two new staff members joined the Unit in 2014: Dr. Yousef Al-Weshahi joined the Unit as Assistant Professor and Ms. Nooriya Al-Rawahi joined as a computer technician.

In 2014, several new workshops were conducted by the ME&IU. These were attended by staff members from the COM&HS, SQUH and the Ministry of Health.

During the year 2014, around 2,150 medical students were trained in the CLS. Several self-practice sessions on all procedures taught during the courses and objective structured clinical examinations were conducted. The CLS was also used for conducting local and international workshops including:

- International Orthopaedic Workshop on Hand Surgery
- National Ultrasonography Workshop for the Anaesthesia Department (central and subclavian catheter insertion)
- Certificate Course in Health Professions Education
- Membership of the Royal College of General Practitioners Workshop for the Family Medicine & Public Health Department
- National Workshop for Emergency Medicine (ultrasoundography and trauma cases)
- Pre-Congress Course on Hysteroscopy and Basic-Intermediate Laparoscopic Gynaecological Surgery
Teaching Programmes

UNDERGRADUATE PROGRAMME

The Medical Informatics section of the ME&IU was involved in teaching the following core courses to undergraduate medical and nursing students: Medical Informatics I and II, and Health Informatics in the preclerkship programme.

Training Courses & CME Activities

Several educational workshops, conducted by internationally renowned faculty and local staff in medical education, were offered by the Unit.

The Certificate Course in Health Professions Education, a three-day course in February 2014, was conducted by Prof. Hossam Hamdy from the University of Sharjah, UAE; Prof. Raja Bandaranayake from Sydney, Australia; and Dr. David Taylor from Liverpool, UK. A total of 45 COM&HS, SQUH, affiliated staff and other health professionals participated in the course.

A three-day Student Assessment Workshop was also held in February 2014, conducted by Prof. Bandaranayake and Dr. Taylor. A total of 27 COM&HS, SQUH and affiliated staff participated in the workshop.

A one-day Image Editing & Manipulation for Medical Purposes Workshop was held in April 2014, conducted by Dr. Ken Masters from the ME&IU.

Dr. Nadia Al-Wardy, Head of the ME&IU, conducted two workshops in the College of Nursing on designing multiple-choice questions and item analysis in April 2014 and May 2014, respectively.

In May 2014, Ms. Buthaina Baqar of the ME&IU conducted a workshop on advising and counselling services entitled ‘Juggling your hats’. Dr. Masters also conducted a workshop on ‘Online Medical Education Resources’. A good number of participants attended both workshops.

Dr. Yousef Al-Weshahi conducted a half-day workshop on ‘Feedback in Clinical Education 101’ in August 2014. A total of 30 participants attended the workshop.

Research

RESEARCH PROJECTS

Social networking addiction amongst Health Sciences’ students at SQU


Investigator: Dr. Ken Masters, Medical Education & Informatics Unit, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


Book Chapter


CONFERENCE & SEMINAR PRESENTATIONS

Conference Presentations

International


Sultan Qaboos University Medical Journal (SQUMJ) was founded in 1997. By December 2014, a total of 30 issues had been published, with a total of 701 articles. SQUMJ’s Editorial Board has 37 members; all of them are staff of either the College of Medicine & Health Sciences (COM&HS), 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 Sultan Qaboos University (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 USA National Library of Medicine, and increase the online visibility of SQUMJ.

Editorial Board

Editor-in-Chief
Lamk Al-Lamki, Professor, Radiology & Molecular Imaging, Adviser to the Vice-Chancellor on Health Affairs

Editor
Samir Al-Adawi, Professor, Behavioural Medicine

Associate Editors
Rashid Al-Abri, Senior Consultant, Surgery (ENT)
Adel Abu-Heija, Professor, Obstetrics & Gynaecology
Badreldin Ali, Professor, Pharmacology, Arabic Editor
Abdulaziz Bakathir, Senior Consultant, Oral Health (Oral & Maxillofacial Surgery), Arabic Editor
Zainab Al-Balushi, Associate Professor, Physiology
Ikram Burney, Senior Consultant, Medicine (Oncology)
Jayakrishnan B., Senior Consultant, Medicine (Respirology)
Shahina Daar, Associate Professor, Haematology
Shyam Ganguly, Professor, Epidemiology & Statistics
Vaidyanathan Gowri, Professor, Obstetrics & Gynaecology
Arunodaya Gujjar, Professor, Neurology
Omar Habbal, Associate Professor, Human & Clinical Anatomy
Maha Al-Khaduri, Senior Consultant, Obstetrics & Gynaecology
Esra Khasawneh, Dean, College of Nursing
Ritu Lakhtakia, Associate Professor, Pathology
Neela Al-Lamki, Professor, Radiology & Molecular Imaging
Norman Machado, Senior Consultant, Surgery
Abdulaziz Al-Mahrezi, Senior Consultant, Family Medicine & Public Health
Ali Al-Mamari, Senior Consultant, Endocrinology
Sultan Al-Maskari, Senior Consultant, Surgery (Orthopaedic)
Joseph Mathew, Senior Consultant, Surgery (Urology)
Abdullah Al-Mujaini, Senior Consultant, Ophthalmology
Khalid Al-Naamani, Senior Consultant, Gastroenterology
Sunil Nadar, Senior Consultant, Medicine (Cardiology)
Karim Nollain, Senior Consultant, Anaesthesia
Allal Ouhtit, Associate Professor, Genetics
Muna Al-Saadoon, Associate Professor, Child Health (Community Paediatrics)
Jumana Saleh, Associate Professor, Biochemistry, Arabic Editor
Mansour Sallam, Senior Consultant, Cardiology
Dilip Sankhla, Senior Consultant, Radiology & Molecular Imaging
Sukhpal Sawhney, Senior Consultant, Radiology & Molecular Imaging
Marwan Al-Sharbati, Associate Professor, Behavioural Medicine
Ashok Sharma, Senior Consultant, Surgery (Cardiac)
Mahmoud H. Sherif, Professor, Surgery (Paediatric)
Sharanjit Thukral, Professor, Microbiology & Immunology
Yasser Wali, Professor, Child Health, Arabic Editor

Editorial Staff
Meriel Carboni, Managing Editor (to 30 Jun 2014)
Natasha Smith, Managing Editor (from 1 Jul 2014)
Sheherajoy Biruar, Technical Editor
Alaister Denoyo, Assistant Editor
Charlotte Woon, Assistant Editor

Activities in 2014

SUBMISSIONS AND REVIEWERS

In 2014, there were 342 submissions to SQUMJ, which is a 20% increase compared to 2013. These manuscripts were submitted from 35 different countries, including Oman (28.6%), India (24.9%), Iran (6.7%), Iraq (5.9%) and Saudi Arabia (4.7%), among others. The overall rejection rate fell to 65% from 73% in 2013.

More than 804 experts from 59 countries reviewed SQUMJ manuscripts in 2014; this is a 79% increase on 2013. A total of 33.2% of these reviewers were from Oman, with the rest from the USA, UK, Europe, India, Egypt, Iran and other Gulf Cooperation Council countries, among others.

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.
Figure 1: Regions of origin of manuscripts submitted in 2014.

Figure 2: Regions of reviewers origin in 2014.
**Publication**

Four issues of SQUMJ were published in 2014, with a total of 108 articles. This included 42 original studies and eight reviews or special contribution articles. A total of 40% of the published articles were from SQU; 13% from Oman; 25% from Gulf countries and the Middle East; and 22% from other countries.

SQUMJ is printed by the SQU Printing Press with a print run of 2,000 copies per issue. 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.

**Indexing Activities**

SQUMJ has been indexed in the World Health Organization’s Index Medicus for the Eastern Mediterranean 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. Additionally, since 2013, SQUMJ has been listed in the Directory of Open Access Journals and the full text of articles are available in the Al Manhal Database of Arab Journals. The most recent impact factor (2011–2013) for SQUMJ was 0.68. The most recent H index (2011–2013) was 5.

In December 2014, SQUMJ was accredited by the Oman Medical Specialty Board (OMSB); this means that authors and reviewers of articles can now apply for continuing professional development (CPD) credits directly from the OMSB. The OMSB CPD system is accredited internationally by the Accreditation Council for Continuing Medical Education and the Royal College of Physicians and Surgeons of Canada.
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 International Organization for Standardization (ISO) 9001:2000 certificate in May 2005 and achieving re-certification with ISO 9001:2008 in May 2008 and again in June 2011. A further achievement was the accreditation for SQUH by Accreditation Canada International (ACI) in March 2014.

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 brought about by 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 on-going hospital-wide education on quality and safety 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:

1. Identify objectives and focus on the needs and expectations of patients.
2. Facilitate the establishment of a baseline for improving performance and outcomes.
3. Provide a basis for certification and accreditation conformance and ensure applicability to Omani laws, legislation and regulations.
4. Provide and practise internationally recognised standards of care.
5. Monitor hospital activities and coordinate the implementation of corrective and preventative actions through auditing and site visits.
7. Identify and mitigate the risks and hazards of a hospital environment.
8. Provide a common framework for effective internal communication though controlled policies, protocols and procedure documents.

The internal structure of the Directorate is divided into four sections: Quality Monitoring, Risk Management & Patient Safety, Documentation & Studies and Special Projects.

**Staff**

**Director**
Salem Al-Tamemi, Senior Consultant, Child Health

**Deputy Director**
Yasmeen Al-Hatmi, (on study leave)

**Support Staff**
Hamdan Al-Siyabi, Lead Auditor
Yousuf Al-Khamisi, Risk Facilitator
Sumaiya Al-Busaidi, Risk Facilitator
Fatma Al-Sharji, Document Controller
Jamal Al-Busaidi, Senior Technician
Roseliyah Shamsudin, Senior Head Nurse
Sheila Magpayo, Coordinator

**Activities in 2014**

**QUALITY MONITORING SECTION**

**Internal Quality Audits**

Two internal quality audits were conducted in 2014. The first audit was held from 2–4 June 2014 with the participation of 15 quality internal auditors and 10 areas/departments visited. The audit was based on ACI standards with a high number of positive observations. Improvement was seen in all services. There were 70 issues raised that needed to be corrected. Reports were sent to all departments with recommendations to resolve all raised issues. In summary, the audit was conducted according to plan without any obstacles encountered.

The second audit was conducted from 3–5 November 2014 with the participation of 23 quality internal auditors and 10 areas/departments visited. This audit was also based on ACI standards with a high number of positive observations. There were 78 issues raised that needed corrective action. Reports were sent to all concerned departments to resolve the issues. This audit was also successful and went according to plan.

**Quality Improvement Plan**

The aim of a quality improvement plan (QIP) is to help providers self-assess their performance in delivering quality education and care and to plan future improvements. The QIP also helps regulatory authorities with their assessment of the service. Out of 43 departments, 25 submitted a QIP and eight of these submitted progress reports. The implementation of the QIP process is relatively new to the Hospital and it is expected to mature with time in conjunction with KPIs.

**Quality Rounds**

These were conducted on a regular basis throughout the year, depending on the need. Sources of need included: incident reports (IRs); audit reports; risk assessment reports;
departmental correspondence; top management directives; customer feedback (patients and staff); DDQ initiatives for improvement; and other means of identifying need. Rounds are conducted with the cooperation of nurses, technicians and other healthcare professionals where necessary.

**RISK MANAGEMENT & PATIENT SAFETY SECTION**

**Risk Management**

In 2014, clinical and environmental risk assessments were conducted twice in 10 clinical and non-clinical areas. There were 115 issues raised; the majority were moderate and tolerable risks. Two-thirds of these are now closed and the remaining third is in progress.

**Incident Reports Statistics**

In 2014, a total of 680 IRs were received via the SQUH IR system from clinical and non-clinical areas. Out of all IRs, the highest number came under the communication category (140 IRs). This category includes verbal miscommunication between departments and units, verbal or physical miscommunication between staff and patients/attendants and any other forms of miscommunication or poor communication at any level. At the end of 2014, almost 40% of total IRs had been closed and finalised. Over the last few years, there is evidence of improvements in incident reporting through the electronic system. This reflects an improvement in patient safety culture among staff at the Hospital.

**DOCUMENTATION & STUDIES SECTION**

**Documentation**

All policy, procedure and process documents are continuously revised and updated. New policies are developed as needed, either because of a new challenge arising or as required for accreditation purposes.

**Studies**

**Inpatient and Outpatient Satisfaction Surveys**

A taskforce was formed to design the Inpatient Satisfaction Survey and Outpatient Satisfaction Survey in order to assess patients' satisfaction at SQUH in an internationally accepted format. Both surveys are available in computerised versions accessible from the Hospital internal webpage. A total of 2,601 responses were recorded for the Inpatient Satisfaction Survey and 3,842 for the Outpatient Satisfaction Survey. Overall, the satisfaction rate was >80% for inpatients and >90% for outpatients.

**Patient Safety Culture Survey**

The objectives of this survey are to raise staff awareness about patient safety, to diagnose and assess the current status of patient safety culture and to identify strengths and areas for patient safety culture improvement. A total of 135 responses were collected for 2014. In comparison to previous years, there was a trend of increased awareness about safety culture amongst Hospital staff.

**Work/Life Balance Survey**

The aim of this survey is to improve the working environment of staff in the Hospital and to provide better care for our patients. It is also part of the continuous QIP for the Hospital. It is conducted yearly in March and April. In 2014, there were 200 responses. This survey highlighted important points for hospital administration to optimise the working environment for hospital staff which is directly related to care of patients.

**SPECIAL PROJECTS SECTION**

**Accreditation Canada International Project**

There were a total of 17 teams working on the ACI project. A Complete On-Site Survey was carried out from 16–20 March 2014. Surveyors visited most of the clinical areas in the Hospital. At the conclusion of their week-long on-site visit, the ACI surveyors shared their observations with staff from the Hospital. Some of the positive observations noted were that our staff and physicians were excited about the project, that they were well-versed in their job roles and that they showed pride in their work. The surveyors also visited patient care areas at random; all of the patients they spoke with stated that their care was excellent.

According to ACI standards, hospitals are awarded ‘Diamond’, ‘Platinum’ or ‘Gold’ levels in different areas. The overall level awarded to SQUH was ‘Gold’. This was based on findings that required immediate attention and closure. The DDQ is working very closely with the concerned teams/departments to close any issues in relation to accreditation requirements; together with the Hospital and University administration, the Directorate strives toward the achievement of ‘Diamond’ level accreditation.

**World Quality Day Celebration 2014**

This was celebrated on 4 December 2014, with the theme “Building a Quality World Together” as announced by Chartered Quality International. The goal of this annual event is to raise awareness of quality, continuous improvement and performance excellence in order to encourage departments’ development. A total of 34 departments participated in the educational exhibition held at the SQUH fountain area.

**Key Performance Indicators**

Hospital departments/units are encouraged to undertake performance measurement through the introduction of KPIs. There was significant progress with this aspect and it is currently leading quality improvement. Data collection remains a challenge. Analysis is performed by the DDQ and reports are presented quarterly to the Hospital Board for information and decisions.
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 IT services in healthcare systems and constantly upgrades the systems with the latest updates. HIS has a dedicated team of qualified and specialised personnel in the various fields of IT to provide these services. They are continuously developing new systems and maintaining the current systems to provide around-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 also developing an in-house enterprise resource planning software called Edges. The software includes many modules; some of which 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 implementation.
- 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.

**Staff**

**Director**

Amer H. Al-Habsi, Assistant Professor

**Research & Development**

Abdullah Al-Mahrouqi, Head of Section

**Network**

Bader Al-Kiyumi, Head of Section

Said Al-Harassi, Senior Network Engineer

Bino T. Chacko, Senior Network Engineer

Amur Al-Jabri, Network Engineer

Mohsin Al-Salmi, Network Engineer

Fahad Al-Shukaily, Technician

**System Administration & Security**

Nasser Al-Azwani, Head of Section

Nakia Al-Riyami, System Security Specialist

Al-Marwah Al-Kharoosi, Technician

**User Support**

Mustafa Al-Hadrami, Head of Section

Younis Al-Mandhari, Technician

Fatima Al-Masoudi, Technician

Hamed Al-Muslihi, Technician

Ibraheem Al-Balushi, Technician

Moosa Al-Khanbshi, Technician

Naima K. Al-Naamani, Technician

Rashid Al-Fori, Technician

Salim Al-Sulaimani, Technician

Hassan Al-Balushi, Technician

Khalifa Al-Balushi, Technician

Rashid Al-Mudalwi, Clerk

Nasra Al-Mahrouqi, Clerk

**Medical Systems**

Jokha Al-Kalbani, Head of Section

Widad Al-Mamary, Senior Programmer

Yahya Al-Salmi, Programmer

Ahlam Al-Maqbali, Programmer

Zaina Al-Maskari, Programmer

Muna Al-Salmi, Programmer

Vishnu Mampatta, Technician

Maryam Al-Balushi, Technician

**Administration & Finance Systems**

Suad Al-Bimani, Programmer

Fatema Al-Faliti, Programmer

Salma Al-Mayahi, Programmer

Sumaya Al-Sawafi, Programmer

Badriya Al-Amri, Programmer

Abir Al-Rashdi, Programmer

**Applications**

Ahmed Al-Shaibani, Head of Section

Mohsin Al-Zadjali, Chief Systems Analyst

Aisha Al-Hosni, Programmer

Nuha Al-Amri, Programmer
Activities in 2014

The Directorate conducted the following activities in 2014:

- Installation of 400 computers and their peripherals in various SQUH departments.
- More than 5,123 calls were attended to by HIS.
- Configuring TrakCare access in all of the computers in the three laboratories in the College of Medicine & Health Sciences.
- Implementation of new active network equipment (switches).
- Completion of wireless project (WiFi).
- Evaluation of closed-circuit television project.
- Addition of new network points and devices in identified SQUH locations.
- Submission of request for proposal for new servers and storage to the Department of Procurement.
- Enhancement of Business Intelligent module in TrakCare system.
- Enhancement of the Dashboard system for TrakCare, Edges and Incident Report systems.
- Upgrading of short message service server.
- Go-live of the Blood Bank system in TrakLab.
- Supporting the TrakCare scheduling system for clinical departments.
- National ID card reader for TrakCare system.
- Working on integration of the TrakCare and Edges systems.
- Providing SQUH departments with required statistical reports.
- Training in the use of the TrakCare system for doctors, interns, nurses, laboratory staff and clerks.
- Enhancement of the Hospital's external and internal websites.
- Enhancement of the Central Sterile Supplies Department system.
- Enhancement of the incident report system.
- Working on the labelling system for medical stores.
- Development of complaints system for the Directorate of Patient Services.
- Addition of new security features on Edges system.
- Implementation of new features in Asset Management module in Edges.
- Implementation of Housing Asset Management module in Edges.
- Implementation of HIS Asset Management module in Edges.
- Enhancement of Biomedical Asset Management module in Edges.
- Enhancement of Store module in Edges.
- Enhancement of Procurement module in Edges.
- Summer training for students from the University and external colleges.

Studies Conducted

The following studies were conducted in 2014:

- SQUH technical and security assessment.
- HIS governance of gap analysis.
- e-Tendering.
- Tendering and evaluation of the fire wall.
- Asset Management module for maintenance.
- Dashboard system.
- Stock management for the Clinical Pharmacy Department in TrakCare system.
- New policies for health services provided by SQUH.
- Labelling system for close-loop cycle in SQUH.
- SQUH Mobile Application.
- Nursing roster system.
The Directorate 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 Directorate carries out the procurement of health commodities such as pharmaceutical, medical, surgical and laboratory items.

The Directorate is continuously looking for ways to improve its performance and achieve its aims. Despite the difficulties sometimes faced to ensure the availability of items, all staff in each section of the Directorate do their best to cut costs; procure cost-effective items; deliver items on time; improve the logistics system; and to be a competitive department with a modern supply system.

Sections of Procurement

The Directorate has 13 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. Stationary
5. Biomedical Supplies
6. Maintenance and Technical Affairs
7. Support Services
8. Hospital Information Systems
9. Clinical Physiology and Cardiac Catheter Laboratory
10. Housing
11. Transport
12. Ticketing
13. Petty Cash.

Staff

Director
Rashid Al-Hinai

Acting Deputy Director
AbdulAziz Al-Thahli

Support Staff
Abdullah Al-Rashdi, Head of Section, Genetics & Radiology
Samia Al-Zidjali, Head of Section, Medical Surgery Supply
Jassem Al-Saadi, Head of Section, Ticketing
Ibrahim Al-Julaidani, Head of Section, Hospital Maintenance & Technical Affairs Departments
Yousuf Al-Naabi, Clerk, Haematology & Histopathology
Fatma Al-Mandhari, Clerk, Biochemistry & Microbiology

Salim M. Al-Ismaili, Clerk, Hospital Maintenance Department & Biomedical Engineering
Mahmood Abdulbaqi, Clerk Hospital Maintenance Department & Biomedical Engineering
Khalid S. Al-Hasani, Clerk, Stationary & Transport & Clinical Physiology & Housing & Catheter Laboratory
Samira Al-Naamani, Clerk, Pharmacy & Nutrition
Naif Al-Maamari, Clerk, Pharmacy
Tufool Al-Zidjali, Clerk, Pharmacy
Salwa Al-Hinai, Clerk, Orthopaedics
Saif Al-Harthy, Clerk, Hospital Information System & Support Service
Ahmed Al-Habsi, Clerk, Medical Surgery Supply
Sulaiman Al-Ghafri, Clerk, Medical Surgery Supply
Hanan S. Al-Wuhaibi, Clerk, Ticketing
Muna Al-Harthy, Coordinator
Nada Al-Kiyumi, Coordinator

Activities in 2014

The Directorate of Procurement is key in purchasing of items needed by the Hospital. Figure 1 shows the important activities that are processed by the Directorate in coordination with other key departments, such as the Medical Store and the Department of Finance, and end-users.

Product Selection

The Procurement Directorate coordinates with various SQUH committees to select the right product that meets the needs of the Hospital. Quality, effectiveness and affordability are the most important selection criteria considered by Directorate staff and committee members.

Procurement Process

The Directorate gets all the specifications from the Medical Stores and 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 to evaluate the quotations and make the appropriate selection according to their needs. After the selection of items, a recommendation (in both English and Arabic) is created in the online system showing the reasons for each selection.

Coordination

The Directorate is key in coordinating with both end-users and suppliers. 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 Directorate’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 Directorate 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 Directorate to coordinate with the supplier. Copies of these letters are forwarded to the end-user, the Medical Stores and the Department of Finance so that they are informed about all amendments.

Figure 1: Important activities processed by the Directorate in coordination with other key departments.
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 leave documentation 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 until August 2014, when this responsibility was handed over to the Directorate of Public Relations & Information.**
- **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 completed.**
- **Helping the relatives to find appropriate transportation to transfer the body.**
- **If the deceased patient is a non-Omani, the Directorate guides the relatives through the required procedure 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-Ghafris, Clerk  
Ibrahim Al-Ghafris, 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 Administration Assistant  
Yousif Al-Bahri, Duty Administration Assistant  
Waleed Al-Harrasi, Duty Administration Assistant  
Mira Al-Mawali, Coordinator  

All staff members are Omani.

### Activities in 2014

The following activities were performed by the Directorate in 2014:

- In cooperation with doctors, approximately 37,246 medical reports were issued.
- Approximately 9,855 visiting passes and 4,753 attendants’ passes were issued.
- A total of 220 materials were translated within the Directorate, including medical reports, leaflets and other administrative materials.
- A total of 34 suggestions, 243 complaints and 55 compliments were received from customers.
- A total of 75,398 health education materials, including leaflets, posters and booklets, were distributed to patients.
- The Directorate organised a number of important events like the Health Education Day and a walkathon as well as participating in the Quality Open Day.
A n organisation’s success and reputation is dependent on its image in the customer’s eye. The Directorate of Public Relations & Information, therefore, works tirelessly in 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
Hani M. Al-Shibli, Video Editor
Salim A. Al-Farsi, Journalist
Saif S. Al-Tamimi, Multimedia Designer
Mustafa M. Al-Jahwari, Clerk
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 2014

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: Activities of the Journalism & Information Department and Printing & Publishing Department in 2014

<table>
<thead>
<tr>
<th>Activities</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covering all SQUH events in local media</td>
<td>50</td>
</tr>
<tr>
<td>Design of event invitation cards</td>
<td>15</td>
</tr>
<tr>
<td>Design of certificates of appreciation</td>
<td>31</td>
</tr>
<tr>
<td>Design of patient educational materials (e.g. leaflets and posters)</td>
<td>25</td>
</tr>
<tr>
<td>Announcement of vacancies, tenders and training programmes</td>
<td>138</td>
</tr>
<tr>
<td>Providing banners for SQUH events</td>
<td>101</td>
</tr>
<tr>
<td>Coordinating with media agencies regarding interviews with hospital staff (doctors)</td>
<td>7</td>
</tr>
<tr>
<td>Design of annual calendar</td>
<td>1</td>
</tr>
<tr>
<td>Production of educational and awareness films</td>
<td>8</td>
</tr>
<tr>
<td>Design of pop-up materials</td>
<td>260</td>
</tr>
</tbody>
</table>

Table 2: Activities of the Cultural & Social Activities Department in 2014

<table>
<thead>
<tr>
<th>Activities</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting all SQUH departments in organising conferences, symposia and workshops</td>
<td>73</td>
</tr>
<tr>
<td>Making arrangements for training programmes in coordination with the Directorate of Training &amp; CPD</td>
<td>382</td>
</tr>
<tr>
<td>Organising the University Graduation Ceremony</td>
<td>1</td>
</tr>
<tr>
<td>Organising the SQUH Annual Exhibition Day</td>
<td>1</td>
</tr>
<tr>
<td>Official visits</td>
<td>81</td>
</tr>
<tr>
<td>Opening ceremony (for new departments)</td>
<td>0</td>
</tr>
<tr>
<td>Arranging appointments for VIPs in the Hospital</td>
<td>243</td>
</tr>
<tr>
<td>Supporting and arranging exhibitions</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 3: Activities of the Employee Services Department in 2014

<table>
<thead>
<tr>
<th>Activities</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police station visits</td>
<td>4</td>
</tr>
<tr>
<td>Court visits</td>
<td>0</td>
</tr>
<tr>
<td>Receiving employees at airport</td>
<td>500</td>
</tr>
<tr>
<td>Farewells</td>
<td>100</td>
</tr>
<tr>
<td>Visas issued</td>
<td>1650</td>
</tr>
<tr>
<td>Visas deposited</td>
<td>260</td>
</tr>
<tr>
<td>ID cards issued</td>
<td>3900</td>
</tr>
<tr>
<td>Road passes issued</td>
<td>270</td>
</tr>
</tbody>
</table>
The Directorate of Technical Affairs 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 Sultan Qaboos University Hospital (SQUH). The Directorate is also responsible for the planning and execution of new buildings to cater for new hospital developments.

The Directorate has five departments: Projects; Health, Safety & Fire Prevention; Bio-Medical Engineering; Hospital Engineering & Maintenance; and Laundry & House Keeping.

**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 for 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 analyses 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 necessary time schedule.

**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 these 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 biomedical 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.

**Heating, Ventilation and Air Conditioning 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**

This Department is responsible for the building cleaning services and the washing of Hospital ward linen and clinical staff uniforms.

**Staff**

**Director**

Juma S. Al-Jabri

**Projects Department**

Mohan R. Kailas, Civil Engineer

Subhash Sule, Senior Hospital Engineer

Muthuraj, Senior Hospital Engineer

Mabruka Al-Siyabi, Civil Engineer

Sakhiya H. Al-Qurini, Civil Engineer

Arun K. Singh, Electrical Engineer

Zainab A. F. Al-Ajmi, Mechanical Engineer

Benjamin George, Mechanical Engineer

Mohammed Kunhi, Draughtsman

**Health, Safety & Fire Prevention Department**

Ahmed Ambusaidi, Head of Department

Ahmed H. Mahruqui, Fire Officer

Vaseem M. A. Khan, Health & Safety Officer

Mazin A. Al-Zadjali, Fire Assistant

Naser N. A. Al-Shaqsi, Health & Safety Engineer

Nasser Al-Manai, Fireman

**Biomedical Engineering Department**

Abdullah M. Al-Hashmi, Head of Department

Khalid M. Al-Mahrizi, Senior Engineer

Edgar K. Sanz, Senior Engineer

Ravindra Inamdar, Senior Engineer

Dominador De Guzman, Senior Engineer

Santiago O. Buniag, Engineer

Khamis H. Al-Lamki, Engineer
Activities in 2014

EQUIPMENT

During 2014, 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.

PROJECTS

To meet the Hospital expansion plans, the following projects were undertaken in 2014, as detailed in Tables 3 and 4. Project proposals for 2014 are shown in Table 5 and projects undertaken in liaison with the University Projects Department are shown in Table 6.
### Table 2: Equipment ordered by the Hospital Engineering & Maintenance Department in 2014

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Equipment</th>
<th>Value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Patient transport trolley</td>
<td>2,376.000</td>
</tr>
<tr>
<td>2.</td>
<td>Medication refrigerator (50 L)</td>
<td>2,870.000</td>
</tr>
<tr>
<td>3.</td>
<td>Trolley transport for endoscopes with four storage units</td>
<td>3,000.000</td>
</tr>
<tr>
<td>4.</td>
<td>Transfer board with leg extension for Operating Theatre ®Steris table</td>
<td>850.000</td>
</tr>
<tr>
<td>5.</td>
<td>Stainless steel work tables</td>
<td>2,220.000</td>
</tr>
<tr>
<td>6.</td>
<td>Medication cart trolley</td>
<td>14,608.000</td>
</tr>
<tr>
<td>7.</td>
<td>Storage cabinet for acids and alkalis</td>
<td>7,500.000</td>
</tr>
<tr>
<td>8.</td>
<td>Medication refrigerator (150 L)</td>
<td>477.000</td>
</tr>
<tr>
<td>9.</td>
<td>Medication trolley</td>
<td>2,080.000</td>
</tr>
<tr>
<td>10.</td>
<td>Fuse kit for power control module for P1900</td>
<td>239.000</td>
</tr>
<tr>
<td>11.</td>
<td>Table width extender for Operating Theatre ®Maquet table</td>
<td>757.000</td>
</tr>
<tr>
<td>12.</td>
<td>Transfer board with leg extension for Operating Theatre ®Maquet table</td>
<td>889.000</td>
</tr>
<tr>
<td>13.</td>
<td>Vertical hot cupboard for main kitchen</td>
<td>4,845.000</td>
</tr>
<tr>
<td>14.</td>
<td>Dry cleaning machine (12 kg)</td>
<td>19,321.000</td>
</tr>
<tr>
<td>15.</td>
<td>Fume hood laboratory (60 kg)</td>
<td>2,778.000</td>
</tr>
<tr>
<td>16.</td>
<td>Shower units</td>
<td>1,960.000</td>
</tr>
<tr>
<td>17.</td>
<td>Mattress, head and leg section</td>
<td>850.000</td>
</tr>
<tr>
<td>18.</td>
<td>Power supply module for Operating Theatre ®Steris C-Max S2 Delivery table</td>
<td>975.000</td>
</tr>
<tr>
<td>19.</td>
<td>Supply, installation, testing and commissioning of 3,200 amp air circuit breakers (block 10 chillers compound)</td>
<td>78,232.500</td>
</tr>
<tr>
<td>20.</td>
<td>15 kVA uninterruptible power supply</td>
<td>17,500.000</td>
</tr>
<tr>
<td>21.</td>
<td>Tabletop steriliser</td>
<td>15,750.000</td>
</tr>
<tr>
<td>22.</td>
<td>Logger with display, universal serial bus data</td>
<td>1,980.000</td>
</tr>
<tr>
<td>23.</td>
<td>Utility trolley</td>
<td>408.000</td>
</tr>
<tr>
<td>24.</td>
<td>Deioniser output (5–6 L)</td>
<td>2,875.000</td>
</tr>
<tr>
<td>25.</td>
<td>Autoclave</td>
<td>2,880.000</td>
</tr>
<tr>
<td>26.</td>
<td>Rotary steam press</td>
<td>33,536.000</td>
</tr>
<tr>
<td>27.</td>
<td>Trolley (laboratory specimens)</td>
<td>550.000</td>
</tr>
<tr>
<td>28.</td>
<td>Pad for patient transfer</td>
<td>1,120.000</td>
</tr>
<tr>
<td>29.</td>
<td>Bellows left for ®Affinity delivery bed (P3700)</td>
<td>572.000</td>
</tr>
<tr>
<td>30.</td>
<td>PC board, motor control for ®CareAssist bed</td>
<td>320.000</td>
</tr>
<tr>
<td>31.</td>
<td>Electronical laser distance measuring device</td>
<td>1,354.000</td>
</tr>
<tr>
<td>32.</td>
<td>Electrical patient couch</td>
<td>44,460.000</td>
</tr>
<tr>
<td>33.</td>
<td>Wash hand basin and automatic tape infrared</td>
<td>1,800.000</td>
</tr>
</tbody>
</table>
Table 4: Projects completed in 2014

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Audiometry laboratory facility for Clinical Physiology Department</td>
<td>40,000.000</td>
</tr>
<tr>
<td>2.</td>
<td>Modifications to the Gynaecology Clinic</td>
<td>4,643,500</td>
</tr>
<tr>
<td>3.</td>
<td>Modifications to work stations of pharmacists in the Pharmacy Department</td>
<td>6,500,000</td>
</tr>
<tr>
<td>4.</td>
<td>11 kV reinforced cement concrete tunnel work in front of the Royal Suite Building</td>
<td>5,500,000</td>
</tr>
<tr>
<td>5.</td>
<td>Creating a garden for psychiatry patients in the courtyard</td>
<td>12,469,600</td>
</tr>
<tr>
<td>6.</td>
<td>Consultancy services for the Hospital Director-General’s Office extension</td>
<td>16,000,000</td>
</tr>
<tr>
<td>7.</td>
<td>Modifications and improvement to the children’s play area in front of the Hospital</td>
<td>3,407,000</td>
</tr>
<tr>
<td>8.</td>
<td>Modifications works in the laundry area</td>
<td>3,000,000</td>
</tr>
<tr>
<td>9.</td>
<td>Power supply to HVAC in block 6/7</td>
<td>3,375,370</td>
</tr>
<tr>
<td>10.</td>
<td>150 kVA generator with automatic mains failure and attenuated enclosure for the Family Medicine &amp; Public Health Clinic</td>
<td>32,428,000</td>
</tr>
<tr>
<td>11.</td>
<td>Pneumatic system control room (removal and reinstallation of aluminium partition)</td>
<td>550,000</td>
</tr>
<tr>
<td>12.</td>
<td>Nurse call system for Wards 1 Purple, 1 Blue and 1 Red</td>
<td>45,973,000</td>
</tr>
<tr>
<td>13.</td>
<td>HVAC modifications works and variable refrigerant flow system for the Accident &amp; Emergency Department</td>
<td>16,000,000</td>
</tr>
<tr>
<td>14.</td>
<td>Design, supply and installation of fire suppression system for Directorate of Hospital &amp; Information Systems server room</td>
<td>22,701,700</td>
</tr>
<tr>
<td>15.</td>
<td>Supply and installation of cooling coils for heating unit 36 and 12 fins</td>
<td>9,350,000</td>
</tr>
<tr>
<td>16.</td>
<td>Air coolers for fountain area for open day events</td>
<td>4,740,000</td>
</tr>
<tr>
<td>17.</td>
<td>Supplying and installation of KARDEX filing system in the Personnel Affairs Department</td>
<td>1,050,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>227,688,170</strong></td>
</tr>
</tbody>
</table>

Table 3: Projects under design/execution in 2014

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Renovation of Hospital boardroom in the Administration Department</td>
<td>18,559,200</td>
</tr>
<tr>
<td>2.</td>
<td>Variable air volume controls, actuators and thermostats in all areas of the Hospital</td>
<td>56,200,000</td>
</tr>
<tr>
<td>3.</td>
<td>Modifications to the Gynaecology Clinic</td>
<td>4,643,500</td>
</tr>
<tr>
<td>4.</td>
<td>Replacement of pumps</td>
<td>223,544,180</td>
</tr>
<tr>
<td>5.</td>
<td>Replacement of air handling unit of zones 5, 10, 13, 15, 18 and 34</td>
<td>860,000,000</td>
</tr>
<tr>
<td>6.</td>
<td>Replacement of fan coil unit (all plant rooms)</td>
<td>10,020,000</td>
</tr>
<tr>
<td>7.</td>
<td>Endoscope washing and disinfecting facility and modifications in minor operating theatres</td>
<td>17,770,500</td>
</tr>
<tr>
<td>8.</td>
<td>Auction yard for SQUH, excluding infrastructure works, design and building contract</td>
<td>154,000,000</td>
</tr>
<tr>
<td>9.</td>
<td>Modifications to workstations of pharmacists in the Pharmacy Department</td>
<td>6,500,000</td>
</tr>
<tr>
<td>10.</td>
<td>Installation of closed-circuit television system in the Hospital</td>
<td>263,173,000</td>
</tr>
<tr>
<td>11.</td>
<td>Replacement of 11 x 300 TR existing chiller by 11 x 325 TR chillers (DS)</td>
<td>1,358,637,000</td>
</tr>
<tr>
<td>12.</td>
<td>Accident and emergency isolation room</td>
<td>5,000,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2,978,047,380</strong></td>
</tr>
</tbody>
</table>
### Table 5: Proposed projects in 2014 at design stage

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Approximate value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Extension to Hospital Director-General’s Office</td>
<td>181,000.000</td>
</tr>
<tr>
<td>2.</td>
<td>Relocation of Operation and Maintenance contractor’s workshop and offices</td>
<td>180,000.000</td>
</tr>
<tr>
<td>3.</td>
<td>Extension of the Delivery Ward building</td>
<td>708,000.000</td>
</tr>
<tr>
<td>4.</td>
<td>Construction of prayer room for the Family Medicine &amp; Public Health Clinic and ORH</td>
<td>18,250.000</td>
</tr>
<tr>
<td>5.</td>
<td>Design of block 10 plant room annex in SQUH complex and consultancy services</td>
<td>29,700.000</td>
</tr>
<tr>
<td>6.</td>
<td>Modifications to the Clinical Physiology Department</td>
<td>18,900.000</td>
</tr>
<tr>
<td>7.</td>
<td>Repair to expansion joint of flyover bridge in front of Hospital</td>
<td>4,995,000</td>
</tr>
<tr>
<td>8.</td>
<td>Minor operating theatre (creation of a new isolation room)</td>
<td>56,672.000</td>
</tr>
<tr>
<td>9.</td>
<td>Supply and installation of morgue in Pathology Department</td>
<td>47,587.400</td>
</tr>
<tr>
<td>10.</td>
<td>Access control system for entire Hospital</td>
<td>200,000.000</td>
</tr>
<tr>
<td>11.</td>
<td>Master clock system in Bone Marrow Transplantation Centre</td>
<td>24,000.000</td>
</tr>
<tr>
<td>12.</td>
<td>Public address system in Bone Marrow Transplantation Centre</td>
<td>50,000.000</td>
</tr>
<tr>
<td>13.</td>
<td>Fire alarm system replacement in Hospital, old Medical Store building and Family Medicine &amp; Public Health Clinic</td>
<td>86,000.000</td>
</tr>
<tr>
<td>14.</td>
<td>Endoscope washing and disinfecting facility, modifications to minor Operating Theatres – medical equipment</td>
<td>125,000.000</td>
</tr>
<tr>
<td>15.</td>
<td>Endoscope washing and disinfecting facility, modifications to minor operating theatres – medical equipment</td>
<td>95,000.000</td>
</tr>
<tr>
<td>16.</td>
<td>Endoscope washing and disinfecting facility, modifications to minor operating theatres – civil, electrical and plumbing works</td>
<td>17,770.500</td>
</tr>
<tr>
<td>17.</td>
<td>Improvement works in the main Pharmacy</td>
<td>32,282.800</td>
</tr>
<tr>
<td>18.</td>
<td>Auction yard – consultancy services</td>
<td>52,000.000</td>
</tr>
<tr>
<td>19.</td>
<td>Installation of work table in pharmacy area</td>
<td>4,384,044</td>
</tr>
<tr>
<td>20.</td>
<td>Modifications to the Accident &amp; Emergency Department's waiting area</td>
<td>20,900.000</td>
</tr>
<tr>
<td>21.</td>
<td>15 fan coil units replacement in plant rooms in blocks 1, 2, 8 and 9 and the lift</td>
<td>10,020.000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1,962,461.744</td>
</tr>
</tbody>
</table>

### Table 6: Projects undertaken by the Directorate in liaison with the University Projects Department in 2014

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Haematology and Bone Marrow Transplantation Centre Building</td>
<td>9,934,848.000</td>
</tr>
<tr>
<td>2.</td>
<td>Administration Building</td>
<td>6,000,000.000</td>
</tr>
<tr>
<td>3.</td>
<td>Accident &amp; Emergency Department extension</td>
<td>2,373,782.000</td>
</tr>
<tr>
<td>4.</td>
<td>Extension to the Radiology and Operating Theatres (ES)</td>
<td>6,699,792.503</td>
</tr>
<tr>
<td>5.</td>
<td>SQUH guest house</td>
<td>0.000 (donation)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>25,008,422.503</td>
</tr>
</tbody>
</table>
### Table 7: Expenditures for 2012–2014

<table>
<thead>
<tr>
<th></th>
<th>Amount in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
</tr>
<tr>
<td>Projects</td>
<td>2,222,048.235</td>
</tr>
<tr>
<td>Engineering equipment replacement</td>
<td>147,176.300</td>
</tr>
<tr>
<td>Biomedical equipment</td>
<td>840,151.100</td>
</tr>
<tr>
<td>Building modification</td>
<td>90,365.145</td>
</tr>
<tr>
<td>Maintenance of plants and equipment</td>
<td>699,330.399</td>
</tr>
<tr>
<td>Maintenance of biomedical equipment</td>
<td>183,935.170</td>
</tr>
<tr>
<td>Cleaning and pest control services</td>
<td>598,942.377</td>
</tr>
<tr>
<td>Laundry services</td>
<td>123,952.224</td>
</tr>
<tr>
<td>Total</td>
<td>4,905,900.950</td>
</tr>
</tbody>
</table>

### Table 8: Energy consumption for 2012–2014

<table>
<thead>
<tr>
<th></th>
<th>Amount in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
</tr>
<tr>
<td>Electricity in kwh</td>
<td>1,025,950.430</td>
</tr>
<tr>
<td>Water in L</td>
<td>84,634.100</td>
</tr>
<tr>
<td>Gas in M³</td>
<td>9,366.325</td>
</tr>
<tr>
<td>Total</td>
<td>1,119,950.855</td>
</tr>
</tbody>
</table>
The vision of the Directorate of Training & Continuing Professional Development (DTCPD) at Sultan Qaboos University Hospital (SQUH) is to be a training centre of excellence in Oman, assuming a leadership role in continuing education, 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 of patient/client care.

Staff

**Director**
Abdullah Al-Mujaini, Senior Consultant, Ophthalmology

**Support Staff**
Kirsten Rude, Teacher
Huda Al-Hosni, Teacher
Joan Henderson, Teacher
Munira Al-Belushi, Teacher
Said Al-Ghafri, Teacher
Shalini Baskaran, Teacher
Samson Pakalapati, Administrator
Rashid Al-Hajri, Administrator
Ali Al-Owaisi, Administrator
Najla Al-Rawahi, Administrator
Fatma Al-Mushfai, Administrator
Ahmed A. Al-Mazroui, Administrator
Muna S. Al-Kalbani, Administrator
Yahya Al-Rawahi, Messenger

Activities in 2014

The following activities were undertaken by the Directorate in 2014:
- Conducted courses and programmes as published in the bi-annual course schedules.
- Submitted the 2013 Event Reflection DTCPD Study Report to the SQUH Director General.
- Processed attachment requests from institutions/individuals.
- Conducted teaching and consultations as per requests.
- Undertook the admission process for the CSSD Technician Course.
- Revised old policies, procedures and processes.
- Participated as a member of various SQUH committees.
- Revised and published course curricula.
- Revised and published course books.
- Prepared and submitted the equipment budget.
- Assessed departmental training needs 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 applications.
- Conducted typing tests for prospective candidates for the Personnel Affairs Department.
- Scrutinised scholarship applications and forwarded approved applications to the Hospital Training Committee (HTC).
- Developed a quality improvement plan and key performance indicators which were then submitted to the Directorate of Quality & Development.
- Updated all forms used in the DTCPD.
- Conducted a practical session for the College of Agricultural & Marine Sciences and other University students on the safe collection of blood.
- Invited American Heart Association (AHA) faculty from their regional office in Dubai, UAE, to conduct AHA-certified courses for accreditation and recognise the DTCPD as a training centre.
- Applied for and obtained accreditation and credit points for scheduled and unscheduled in-house development programmes from the Oman Medical Specialty Board (OMSB).
- Organised certificate awards for Central Sterile Supplies Department technician graduates.
- Submitted to the OMSB an accredited course evaluation summary of the DTCPD courses as well as those from other SQUH department to comply with the OMSB requirements.

New Developments in 2014

The following new developments were undertaken in 2014:
- Updated the guidelines for smooth processing of training requests.
- Updated the colour-coded bi-annual course programme schedule indicating eligibility requirements.
- Evaluated and revised the quality manual, policies, procedures, processes, guidelines and standards.
- Developed a quality improvement plan.
- Conducted the Patient Safety Awareness Workshop for clinical staff as per the Accreditation Canada International requirements.
- Published the DTCPD Newsletter.
- Achieved the status of AHA Training Centre for AHA courses.

**Omanisation**

The following Omanisation goals were achieved in 2014:
- Recruited two Omani clerical staff.
- Recruited one Omani teaching staff.

**Plans for 2015**

The following activities are planned for 2015:
- Organise in-house development/unscheduled programmes based on actual Hospital and department needs.
- Update the course curriculums and course brochures.
- Continue with the improvement of the quality system.
- Develop new courses according to identified needs/requests.
- Expand the frequency of scheduled courses wherever possible.
- To pursue proposal of a Central Sterile Processing Technologist Course at the diploma level.
- Continue to revise/generate new policies as required.
- Update the DTCPD is online home page.
- Improve staff attendance at mandatory courses in co-operation with the Medical Advisory Committee/HTC/Hospital management.
The responsibilities of the Department of Finance involve:

1. Preparation of the Sultan Qaboos University Hospital (SQUH) annual budget for approval by the Ministry of Finance; monitoring approved funds for effective utilisation of the same; monitoring staff induction costs against the approved staff budget; and maintenance of various statistics pertaining to staff, etc.

2. Processing of staff salaries on a monthly basis and ensuring timely payments; processing of leave salaries; timely settlement of termination benefits for staff leaving the hospital permanently, etc.

3. Processing of suppliers’ and contractors’ bills for payments in coordination with the supplies and stores departments.

4. Maintaining the petty cash account.

5. Collection of 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 SQUH management.

**Staff**

**Director**
Nasser S. M. Al-Salmi

**Acting Deputy Director**
Ahmed S. A. Al-Farsi, *Head, Budget Section*

**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*
Zuweina A. M. Al-Habsi, *Accountant*
Nasser M. K. Al-Rubaiey, *Accountant*
Naeema J. R. Al-Saadi, *Accountant*
Azhar S. S. Al-Dghaishi, *Accountant*
Mohammed J. S. Al-Ramadhani, *Accountant*
Ibtisam J. J. Al-Malki, *Accountant*
Younis K. Al-Siyabi, *Accountant*
Saada H. K. Al-Maamri, *Accountant*
Dalal S. Al-Wahaibi, *Accountant*
Nada N. Al-Kindi, *Accountant*
Hanan S. M. Al-Abri, *Accountant*
Nadia S. S. Al-Hinai, *Coordinator*
Asma S. Al-Musalhi, *Clerk*
Ali K. Al-Abri, *Clerk*
Laila A. Al-Amri, *Clerk*
Jaber S. Al-Bakri, *Clerk*
Ahad T. S. Al-Dhabbari, *Clerk*
Laila S. A. Al-Salti, *Clerk*
Muna A. S. Al-Rawahi, *Clerk*
Sulaiman H. S. Al-Talei, *Messenger*

**Activities in 2014**

During the year ending 2014, the number of staff paid salaries was 2,840. The Hospital budget for the year 2015 was prepared and submitted on time to the Ministry of Finance for approval. The Department also processed 6,598 vouchers of suppliers and contractors for payment during the year. The Hospital revenue collection for the year ending 2014 was OR 1,429,172 which accounted for an increase of approximately 12% over 2013 in revenue generation. Constant monitoring of the budgetary allocation and timely intervention resulted in a 97% utilisation of the budget for the year ending 2014. The petty cash disbursement for purchase of day-to-day urgent items for 2014 was OR 14,487.
The Department of Housing is responsible for arranging accommodation for all of the employees of Sultan Qaboos University Hospital (SQUH). Assignment of residences is allocated as per housing rules and policies 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 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 Officer*
Khalifa Al-Hinai, *Offices Furnishing Officer*
Fahad Al-Belushi, *Furnishing*
Thani Al-Habsi, *Housekeeping*
Bader Al-Hadabi, *Housekeeping*
Said Al-Senani, *Housekeeping*
Adil Al-Ghafr, *Housekeeping*
Said Al-Maanei, *Housing Store*
Saif Al-Hadrmi, *Housing Store*
Mohammed Al-Ghaithi, *Housing Store*
Al-Yaqdhan Al-Seyabi, *Clerk*
Rahma Al-Hosni, *Coordinator*
Salim Al-Mabsali, *Worker*
Wani Al-Shuaibi, *Worker*
Younis Al-Adwani, *Worker*
Asad Al-Raqadi, *Worker*

The Department has 19 employees and is fully Omanised.

Activities in 2014

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.
- Provision of 12 rooms on campus for the medical internship programme.
- Continuous replacement of residence furniture as needed.

**Housing Equipment & Maintenance**

The responsibilities of this section include:
- Establishment of a human resources system (Vision 2000) to record data on occupants and houses.
- Launch of the electronic system (Edges) to record data on office furniture and inventory transactions.
- Renewal of contracts for the purchase of office furniture for the years 2014–2016.
- Meeting the majority of housing furniture requests.
- Providing furniture to newly rented accommodations.
- New purchases for residential requirements.
- Preparation of obsolete items for auction.
- Meeting the majority of maintenance requests and other requirements through appropriate liaison with other departments.
- Cleaning and preparing residential units before occupancy.

**Training**

The responsibilities of this section include:
- Following-up the Department staff training with the Directorate of Training & Continuing Professional Development.
- Contributing to the SQUH orientation programme.

**Quality Management**

The responsibilities of this section include:
- Contributing to the Accreditation Canada International programme.
- Contributing to the yearly planned preventative housing maintenance through the SQUH Directorate of Technical Affairs.

**Human Resources Transport**

The responsibilities of this section include:
- Following-up with SQUH administration about the Department’s request for additional vehicles.
- Following-up to the request to appoint more staff to the Department due to increasing job responsibilities.
The Department of Medical Records 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, 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 fully electronic system functioning by the end of 2015 after all legal issues have been finalised.

ADMISSION & REGISTRATION SECTION

This is the largest section, employing the clerks and receptionists of all clinics, including: Outpatient, Oral Health, Family Medicine & Public Health and Student clinics. The registration of patients in the Emergency Medicine Department is important as it is a crucial area in SQUH which operates 24 hours a day. In 2014, a lot of work was carried out to improve the communication office which was established in 2013 to deal with the enquiries and appointments of all 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 into the new electronic system, such as consent forms, is scanned for inclusion. In 2014, a fax and referrals office was also added to this section. New equipment has been added to improve the services of this section.

CODING SECTION

This section analyses all inpatient discharge records and assigns a numeric code to diagnostic data based on the International Classification of Diseases system, ICD-9-CM for procedures.

STATISTICS SECTION

This section prepares statistics for the SQUH administration and departments as well as 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

This 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 MOH, whereas births are reported on a monthly basis to the MOH.

Activities in 2014

The activities in the Medical Records Department for 2014 are shown in Tables 1 & 2.

Table 1: Department of Medical Records activity in 2014

<table>
<thead>
<tr>
<th>Activity</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients registered in the Emergency Medicine Department</td>
<td>63,975</td>
</tr>
<tr>
<td>Inpatient records coded</td>
<td>28,804</td>
</tr>
<tr>
<td>Birth notifications issued</td>
<td>4,570</td>
</tr>
<tr>
<td>Death notifications issued</td>
<td>627</td>
</tr>
</tbody>
</table>

Table 2: Patient registration in 2014

<table>
<thead>
<tr>
<th>Clinic/department</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient clinics</td>
<td>130,034</td>
</tr>
<tr>
<td>Radiology &amp; Molecular Imaging Department</td>
<td>86,813</td>
</tr>
<tr>
<td>Physiology Department (Clinical)</td>
<td>23,961</td>
</tr>
<tr>
<td>Day Care Unit</td>
<td>1,4914</td>
</tr>
<tr>
<td>Family Medicine &amp; Public Health Clinic</td>
<td>45,215</td>
</tr>
<tr>
<td>Oral Health Clinic</td>
<td>13,394</td>
</tr>
<tr>
<td>Student Clinic</td>
<td>15,301</td>
</tr>
<tr>
<td>Physiotherapy &amp; Rehabilitation Department</td>
<td>9,445</td>
</tr>
<tr>
<td>Total</td>
<td>339,077</td>
</tr>
</tbody>
</table>
Department of Transport

The Department provides the following services:

- Transport services for Sultan Qaboos University Hospital 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
Appendix I

CLINICO-PATHOLOGIC CONFERENCES: SCRAPS 2013–2014

Surgery, Clinical disciplines, Radiology, Anatomy, Psychiatry and Laboratory Sciences

Throughout the academic year, the College of Medicine & Health Sciences (COM&HS) conducts weekly Surgical Pathological Conferences (SCRAPS) where multidisciplinary cases are presented to medical students, residents, clinicians and academics in Sultan Qaboos University (SQU) as part of their continuing medical education.

The objectives of SCRAPS 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.

SCRAPS is the oldest and only regular academic activity that brings together the students and staff of the COM&HS and Sultan Qaboos University Hospital (SQUH). SCRAPS 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 SCRAPS activity is organised by the office of the Dean of the COM&HS. The current convener 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 SCRAPS sessions in each academic year. The case-based presentations are made by all the departments in the COM&HS 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. Each presentation lasts 45 minutes followed by open discussion. The discussions at SCRAPS 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, Master’s and Ph.D. students, faculty and junior and senior doctors. In 2010, the Best Student SCRAPS Presentation Award was introduced. In addition, since January 2012, the activity has been accredited by the Oman Medical Specialty Board for continuing professional development (CPD) credits. The activity is awarded 0.5 CPD credit points in category II, while speakers are awarded 2 CPD credit points per presentation. The maximum is 21 points.

The SCRAPS presentations are evaluated by 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 three prizes for the best SCRAPS every year.

There were a total of 20 SCRAPS presentations in 2013–2014.

PRIZES FOR 2013–2014

Best Student Presentation Award
‘Unveiling Cancer’, Pathology Dept. Presented by: Mr. Hamed Al-Badi, Student, COM&HS.

Best SCRAPS Awards

First place
‘The Where the Money is’, Haematology Dept. Presented by: Dr. Khalil Al-Farsi, Haematology Dept.; Dr. Rashid Al-Sukaiti, Radiology Dept.; Dr. Ibrahim Al-Haddabi, Pathology Dept.; Dr. Hani Al-Qadhi, Surgery Dept.

Second place
‘Seen but not Observed,’ Medicine Dept. Presented by: Dr. Omayma El-Shafie, Prof. Nicholas Woodhouse, Medicine Dept.; Dr. Samir Hussein, Dr. Rashid Al-Sukaiti, Radiology Dept.; Dr. Asim Qureshi, Pathology Dept.; Dr. Norman Machado, Surgery Dept.

Third place
‘Beyond Borders,’ Obstetrics & Gynaecology Dept. Presented by: Dr. Vaidyanathan Gowri, Dr. Nooreen Ishitat, Dr. Silja Pillai, Obstetrics & Gynaecology Dept.; Dr. Asim Qureshi, Pathology Dept.; Dr. Anupam Kakaria, Radiology Dept.; Mr. Khalid Al-Hamadani, Pre-intern Student, COM&HS.

Appendix II

CURRICULUM INFORMATION

Full information on all COM&HS curricula can be found on the following website at: http://www.squ.edu.om/medicine/Home/Programs