

Health for all

This issue of OER Dossier on Oman's healthcare sector coincides with the MEDX 2007, the first international medical and healthcare exhibition in Oman to be held from September 10-12, 2007 at Oman International Exhibition Centre. The landmark event will provide a vital opportunity for healthcare companies trying or willing to enter Oman as well as GCC healthcare markets.

Oman's achievements in healthcare, in a relatively short span of three decades, have been recognised not only by the citizens and expatriates of Oman but also by the international community.

The Ministry of Health (MoH), through its Five-Year Health Development Plans, is spearheading innovations and improvements in the healthcare infrastructure, creating new institutions and new programmes to fulfil the health needs as well as to address potent threats from emerging health problems. The advent of modern information technology (IT) has further created new opportunities for Oman to optimise the efforts to achieve the goal of health for all. The majority of the healthcare sector is run by the government although the private sector is very active in the provision of clinic services.

The efficiency and effectiveness in Oman's healthcare sector can be attributed to the prioritisation of primary healthcare as manifested in the Sultanate's Five-Year plans beginning 1970, close cooperation with international organisations such as the World Health Organisation and UNICEF as well as the initiative of decentralisation adopted in 1990. The decentralisation policy empowered the administrative machinery, promoted the planning process at the local level and resulted in a tremendous increase in health services across the country.

The hospitals and extended health centres in Oman have also made a remarkable progress to provide the best-in-the-class healthcare facilities in the Sultanate. Oman's healthcare sector relies primarily on imports for the medicines and other related products as there are very few pharmaceutical manufacturing companies in the Sultanate. Despite the market constraints, the manufacturers are taking active steps to grow the industry by broadbasing their product portfolio and joining hands with international majors.

OER Dossier AN INDUSTRY REPORT - HEALTHCARE

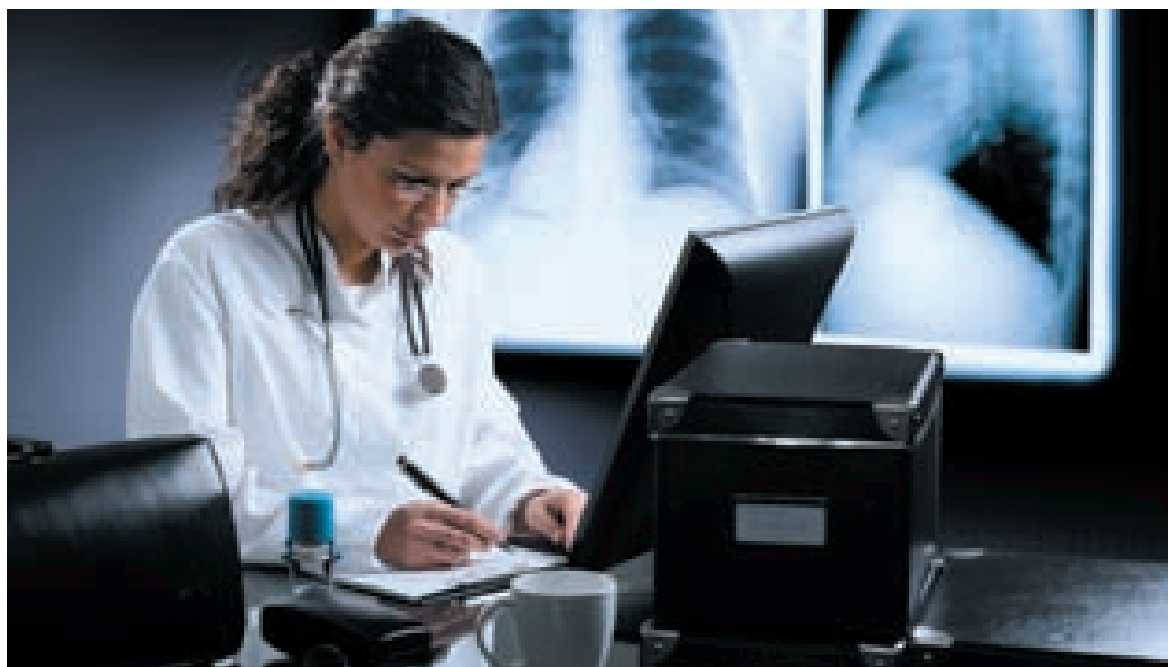
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Home to quality medical services

Oman's healthcare sector has to its credit a host of quantitative and qualitative developments, with excellent performance by both public and private healthcare institutions. OER Dossier reports



The Sultanate of Oman has one of the most efficient healthcare systems in the Middle East & North Africa (MENA) region. Over the last 30 years, Oman has invested heavily in the health sector and succeeded in creating a modern hospital system.

Health for all has been approved as a national policy in Oman. The main focus

of the national health policies are that healthcare is the right of every individual and therefore it is integral to improve the quality of health services and have a combination of curative and preventive services at the local and regional level.

Methodical planning

Prior to 1970 there were very limited health services. The situation was similar in other sectors of social and eco-

nomic life. Developments into a modern state started with the Renaissance in 1970. Following its establishment in 1970, MoH in the Sultanate of Oman realised the importance of planning for health developments. It, thus, started its first five-year health development plan in 1976. Since then, health development plans had a significant impact on health services and health status and has reflected the commitment

of the government to develop health services and health care. Health development planning has gone through 3 phases. The first phase extended from 1976 to 1990, in which three 5-year plans were implemented. These plans were concerned with building health services infrastructure as there were, at that time, few health institutions that were not enough to face the prevailing unsatisfactory health status.

The second phase of planning started in 1991 and included three five-year health plans (the fourth, fifth and sixth), and was completed by 2005. This later phase was guided by directions formulated after a comprehensive review of the health system in 1990. Among others ‘Decentralisation of health services’ was a key direction and was implemented through the establishment of directorates general of health services for 10 health regions, with delegation

OMAN’S MAJOR HEALTH PARAMETERS

	% change (2004/2005)	2005	2004
Crude Birth Rate (per 1000 population)	3.1	24.75	24
Infant Mortality Rate (per 1000 live births)	-0.3	10.28	10.30
Hospitals	1.8	58	57
Health centres (with beds)		67	67
Health centres (without beds)	5.3	60	57
Bed/1000 Persons	-2.3	2.10	2.15
Doctor/1000 Persons	3.7	1.66	1.60
Nurse/1000 Persons	2.2	3.70	3.62
Life expectancy at birth		74.28	74.30

Source: Ministry of National Economy

of financial and administrative authorities. In 1993 local directorates at Wilayat level was established followed by initiative for hospital autonomy in the year of 2000.

The preparation of plans of the second phase followed ‘the managerial process for national health development’. These plans included different health programmes, each directed to one or more

priority health problem. The general framework of the 4th, 5th and 6th plans was prepared at the central level. The 5th and 6th plans included 10 detailed regional plans while the 6th plan included, in addition, 19 Wilayat plans, in line with the decentralisation policy. Health plans of this phase emphasised qualitative development in addition to the quantitative and geographical expansion of health services. The decentralisation policy empowered the administrative machinery, promoted the planning process at the local level and resulted in a tremendous increase in health services across the country. A number of hospitals were established in the health regions to provide speciality services mainly at secondary care level with limited tertiary care. Human resources development took place through the establishment of training health institutes mainly for nursing, medical laboratories, radiography, assistant dentists, assistant pharmacists and health inspectors and other paramedic.

The 7th Five-Year Health Development Plan (2006-2010) characterises the third phase of planning. It had three pillars: first is the 'National Strategic Plan' concerned with the visions, goals, general objectives and strategies at the national level and expected results were formulated using evidence-based-management philosophy. The second in the form of 'Regional Operational Plans' which are 'detailed plans' based on the strategic plan. These detailed plans are to be implemented by the concerned directorates at the regional and/or central levels. Regional Operational Plans include targets, operational activities, required resources and also the indicators for monitoring and evaluating implementation. The third are the 'Local Supportive Plans' designed at Wilayat level by the 'Wilayat health committees' to support the regional operational plans. These are in the form of short-term health projects planned

for one year and consider community participation and cooperation among other sectors relevant to health.

World-class facilities

Eminent doctors practising in the Sultanate too have ranked Sultanate's healthcare sector on high pedestal. As Dr. Bashir M. Muhammad, Managing Director, Al Amal Medical & Health

gious diseases are not imported into the country. Citizens and residents returning from endemic areas are properly screened for such diseases. Residents who work in the Sultanate are checked for any major diseases before being given residency status. The MoH and private hospitals have the best possible and latest diagnostic and therapeutic equipment. The standard of knowl-



I am personally distressed when I see patients' clinical details on the front page of the newspapers relating to some 'miracle' cure which turns out to be some routine procedure. This is a form of advertising which I personally find distasteful.

Dr. Donald Mowat, Chief Medical Officer, Hatat Polyclinic

Care Centre says, "Oman's healthcare scenario, measures very favourably with other western countries. I would say that with the present set up of healthcare available in Oman, there is little what other countries can offer, in the healthcare sector. Preventive measures taken by the Ministry of Health (MoH) ensure that infectious and conta-

edge of the medical and paramedical professionals is also of very high standards ensuring one of the best available healthcare facilities in the world."

Dr. Donald Mowat, Chief Medical Officer, Hatat Polyclinic comments, "Overall health services in Oman are excellent, particularly those provided

by the Government. The government sector has achieved great successes with particular regard to preventive medicine. Diseases such as polio and malaria are virtually non-existent with regards to endemic infections.

Great advances have also been made in technical areas, for example, the oncology unit at the Royal Hospital. The main deficiency that I can see is with regard to rehabilitation and care of the chronic sick in general. This burden is largely carried by the patients' families. One other area which I feel could be improved is the ambulance service. At present, I understand that ambulances will only be used for accidents. This leaves those patients with strokes and heart attacks without appropriate transport.

With regard to the private sector, this seems to be a bit of a curate's egg – good in parts. It should be remembered that the private sector caters for about 50 per cent of the population and the standards can vary from excellent to unacceptable. I am puzzled as to why so many clinics have been allowed to have operating theatres and in-patient facilities while not being categorized as hospitals. This must surely leave the actual private hospitals at a disadvantage because of the investment involved.

In comparison to other GCC countries, I think Oman can be proud of itself. Other countries have opted for a more high-tech approach while Oman has concentrated on prevention while at the same time is introducing more services of a technical nature. The improvement in the health of the population over the past 30 years is truly impressive. One major difference between other GCC countries and Oman is that people in Oman do not seem to be prepared to pay as much for their health as they do elsewhere. One has to compare consultation fees here with those of the rest of the GCC to realise the difference.



One area which I feel could also be improved is with regard to monitoring ethical behaviour in the private sector. I am personally distressed when I see patients' clinical details on the front page of the newspapers relating to some 'miracle' cure which turns out to be some routine procedure. This is a form of advertising which I personally find distasteful. With regard to alternative medicine, Oman already has too many snake-oil salesman and scam artists.

There may well be a place for registered practitioners of services such as acupuncture, osteopathy and chiropractic but many other forms of alternative medicine are simply designed to part the patient from his money as well as being potentially dangerous. The UAE has introduced a system whereby medicine practitioners can only be licensed after examination and I feel that this should be considered here."

Sharing his views on Oman's health sector, Dr. Rashid Khalfan Al-Abri, Head, Quality Management Department, Head ENT Unit, Sultan Qaboos University Hospital says, "The health sector in Oman is progressing very well and is keeping itself update in terms of technology and knowledge, both in government sector and private sec-

tors. For the last 37 years, the sector has seen excellent achievements and was the best in the world in term of using available resources. However, there are a few challenges being faced by Oman's healthcare sector, such as qualified work force shortages; low salary for care providers compared to nearby countries, and challenges regarding health awareness regarding illness and habits."

Omanisation

Oman's healthcare sector has significantly contributed towards Omanisation and the Omanisation level in the MoH institutions shot up from 54 per cent in 2000 to 66 per cent in 2005. Omanisation of physicians rose to 27 per cent from 19 per cent and that of medical specialists rose to about 25 per cent from 14 per cent in 2000. During the Sixth Five-Year Plan (2000-2005) the stock of Omani workforce as a whole increased by 52 per cent from 8,826 in 2000 to 13,433 in 2005. Omanisation of the nursing category has been moving forward successfully and it is projected to reach 83.2 per cent by 2010.

By the end of 2004, the Omanisation level of the nursing category reached 56 per cent compared to 11.6 per cent in 1990. The ministry realised early on the importance of developing local

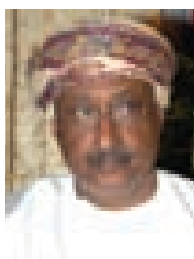
human resources and began establishing nursing and paramedic training institutes in the early 1990s. Currently, there are 17 training institutes run by the MoH, including 12 nursing institutes and one specialised nursing centre. Altogether, 531 nurses graduated during 2004 with basic diploma. In addition, 114 nurses graduated with post-basic qualifications from the Specialised Nursing Institute, which was set up in 1997. The institute started psychiatric nursing last year, in addition to the existing programmes in nephrology, critical care in paediatrics and neonatology, midwifery and nursing administration.

Recently, Dr Ali bin Mohammed bin Moosa, Minister of Health said physicians' Omanisation drive has been also given equal prominence in the ministry's human resources development programme. Currently, there are 736



Omani physicians out of a total of 2,755, representing 27 per cent Omanisation. The Omanisation of physicians is expected to reach 46.8 per cent by 2010. To this end, the Sultan Qaboos University has increased the number of intake to the Faculty of Medicine and Health Sciences. The ministry provides all levels of healthcare through an umbrella of health services in 140 health centres,

20 extended health centres and 49 hospitals. The Omanisation in the MoH institutions has exceeded 65 per cent as a whole compared to 53 per cent in 2000. Of this, nurses represent an Omanisation of 56 per cent, pharmacists 46 per cent, health administrators 96 per cent, doctors 27 per cent, specialist/consultants 21 per cent and physiotherapists 65 per cent.



Excellent performance by MoH

In an exclusive interview with Dossier, HE Dr Ahmed Bin Abdul Qadir Al Ghassani, Under Secretary for Health Affairs, Ministry of Health (MoH), outlines in detail the strengths and strategies of Oman's healthcare sector

What are your views on the overall health care scenario in Oman?

Oman is an upper middle-income country with a GDP per capita of RO5,319.9 (US\$13,782) in 2006. It is relatively a large country with difficult terrain and an intricate topography, with high and rugged mountains and barren valleys. It has a relatively small population of 2.6 millions who are scattered over large areas of sparsely populated settlements, many with 500 or fewer inhabitants. These characteristics make coverage of the entire population both costly and difficult.

The health system in Oman is characterised by its universal coverage for both citizens and public sector expatriates working in the country. The healthcare delivery system in Oman may be considered as a public healthcare model. Health services are predominantly financed and run by the government sector. The government healthcare system accounts for 93 percent of all hospitals and 97.5 percent of all hospital beds. Although there are 732 private clinics in the country, only 25 percent of these clinics provide limited speciality care.

About 78 percent of doctors, 92.5 percent of nurses and 85 percent of other paramedic professionals practise in the public sector. Oman spends about 3 percent of its GDP on health and this amount to RO84 (US\$218) per capita per year. Oman finances its healthcare system largely through government's

regular budget and private out-of-pocket expenditure is very limited. Government contribution accounts for over 80 percent of the country's total health expenditure. According to the report of the World Bank mission in 2000, Oman's per capita health expenditure is lower than other countries in the world with similar income level. And yet, the health outcomes from this relatively low spending were considered remarkable by international agencies.

What are the major strengths of Oman's health care sector?

The Government of Oman has developed a health policy that is based upon several basic principles – provision of comprehensive public and personal health services to its population through a health system with primary healthcare as its cornerstone; equity in the distribution of health services among different population groups according to health needs; community involvement in planning and implementation of its healthcare aimed at developing community self-reliance for sustainable health development; responsiveness to health and non-health needs of the community and inter-sectoral co-operation with other health-related sectors to ensure positive impact on community health.

In addition to the Ministry of Health (MoH) which is the main healthcare provider, other healthcare providers include Sultan Qaboos Univer-

sity Hospital, Armed Forces Medical Services, Royal Oman Police Medical Services, Diwan Medical Services, Petroleum Development Oman Medical Services and the private health sector. For organising the national health system, MoH has divided the country into ten self-contained health regions and each comprises wilayats. The approach to decentralisation has allowed MoH to delegate necessary authorities and responsibilities at regional and wilayat levels, thus encouraging local initiatives, local planning, administration and budget control. Integration of health programmes, through the wilayat health system, has led to improved and efficient service provision. It has also helped in achieving a higher utilisation of the existing services, through a unified district health infrastructure, rather than disease-specific services and programmes separately organised and managed in a vertical manner.

The implementation of health policies and strategies has resulted in rapid and significant changes in health and mortality pattern that were witnessed in the country over the years since 1970. The World Health Organisation (WHO) has developed a set of indicators to evaluate health system performance. Using these indicators, WHO has ranked Oman first among all 191 WHO member states for its attainment of level of health and eighth as regards overall health system performance in its 2000 report. In 2001 an independent nationwide survey to assess the out-

comes from government investments in public sectors found the rating of public satisfaction and responsiveness of the health system is as high as 70 percent. The World Bank, in evaluating the performance of Oman's health system, concluded in its report of March 2001 that the system performs well on most of its basic objectives and from an overall sector management perspective, the health sector is well-run. It also considered the system relatively efficient from a macroeconomic perspective.

What are the challenges being faced by the healthcare sector in Oman?

In spite of the achievements, there are a number of challenges that face the healthcare system in Oman in the coming period. These are challenges related to the basic infrastructure, financing the healthcare system and the nature and types of health problems. The scarcely-distributed population constitutes one important challenge to provide the population with the required or planned health services. The 2003 census showed that about 95 percent of the foci are less than 1000 individuals in size and they constitute only 17.6 percent of the total population. This nature of population distribution was a barrier to achieve a target of one health centre for every 10 thousands of population and require the development of innovative strategies to reach remote population foci of small sizes. Because of this population distribution, there are about 12 percent of the health centres that serve less than 1000 individuals. This would definitely have cost implications and it is not the most cost-effective way to use resources.

The epidemiological profile in the country and the transition from communicable to non-communicable diseases has its own implication on the type training of health workers especially doctors and nurses. There is a need for increas-



The health system in Oman is characterised by its universal coverage for both citizens and public sector expatriates working in the country

ing numbers of specialised physicians and nurses working in special medical fields. This later together with the high dependency on expatriate workers and the increasing costs of recruiting expatriate health workers have required more intensive efforts to enhance self

reliance. In addition to the later costs, the increasing costs of training health workers and the healthcare technology have necessitated increasing expenditure on health. Future challenges are to maintain our health achievement and further improve health status with the

limited resources and to find alternative for financing the health system.

The epidemiological transition taking place in Oman from the communicable diseases to the non-communicable diseases has its own challenges. Non-communicable diseases are seen in about 56.8 percent of patients seen in the outpatient departments and 39.3 percent of inpatients in MoH health institutions. They form a burden on any health system as they are difficult and costly to diagnose and manage and their managements are usually life long. In fact the control of such group of diseases is a big challenge as it is not dependent only on the health system but mainly on personal care as they related to unhealthy life style of the individuals. Cancer, heart diseases, chronic renal diseases and diabetes are the main health problems of this group of diseases. Other diseases that constitute challenges to the health system include those related to congenital anomalies and those related to malnutrition. These later diseases are also related to a great extent to personal behaviours and intensive health education efforts are needed. In addition, there is a need for intensive efforts to maintain the achievements in the control of communicable diseases for example childhood diseases and malaria.

What are the new programmes of the MoH to further improve the healthcare sector in Oman?

In the light of the identified objectives and strategic directions for health development in Oman (2006-2010), a number of working priorities in different fields were defined. This has resulted in a large number of health problems and priorities which necessitated the ranking and prioritising of these health problems using scientific methodology. Following the prioritisation of problems, a framework for the 7th Five-Year Health Developmental Plan

(2006-2010) was developed including the proposed ten visions and the expected goal(s) from these visions.

Visions

- Delivery of high standards of health care to the community;
- Quality assurance of health services and patient safety;
- Alleviation of risks threatening the public health;
- Promoting woman and child health;
- Dissemination of healthy lifestyles in the community;
- Better nutrition for all;
- Joint action for better community health;
- Achieving excellence in the managerial processes;
- An efficient health information and research system to meet the needs of health system;
- Availability of qualified human resources in suitable numbers to work in health institutions.

Goals

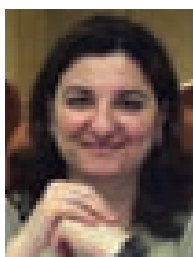
- Developing pillars of the health system;
- Provision of high quality health services;
- Reduction of morbidity and mortality due to diseases and injuries to the lowest international rates;
- Improving healthcare provided to women and children;
- Increasing health awareness, correcting attitudes and establishing healthy behaviours and practices in the community;
- Improvement of the nutritional status of Omani society;
- Mobilisation of the community and health related sectors for health promotion;
- Development of health management practices at all levels;
- Strengthening the system of statistics, health information and research;
- Ensuring the availability of adequate numbers of suitably qualified,

trained and efficient workforce.

Domains of the 7th five-year plan for health development:

After defining the visions and health goals for the period (2006-2020), the general framework and the strategic plan for the plan was completed. This has included laying down the general or direct objectives and 30 domains have been identified to be targeted during the next five years. The domains of the 7th Five-Year Plan for Health Development are as follows:

- Primary healthcare;
- Secondary and tertiary healthcare;
- Pharmaceutical care;
- Nursing care;
- Laboratories;
- Blood services;
- X ray services;
- Rehabilitation services;
- Quality assurance/improvement and patient safety;
- Communicable diseases;
- HIV/AIDS and Sexually Transmitted Infection (STI);
- Malaria;
- Non-Communicable Diseases;
- Eye health;
- Ear health;
- Oral and dental health;
- Mental health;
- Genetic diseases;
- Environmental and occupational health;
- Accidents and injuries;
- Woman health;
- Child health;
- Health education and communication;
- Adolescents and youth health;
- Nutrition;
- Community participation;
- Health management;
- Health information and statistics;
- Health studies and research;
- Human resources development and Omanisation in the health field.



By Dr Jihane Tawilah
WHO Representative, Sultanate of Oman

'Oman's an exemplary model of WHO-member state cooperation'

Impressive health gains have been achieved in Oman in a relatively short time. This is quite evident from the overall health indicators which are comparable to advanced developed countries. Oman actually has already met many of the targets of the Millennium Development Goals. The Ministry of Health (MoH) has successfully controlled communicable diseases and the immunisation programme has maintained near universal immunisation for more than 5 years.

The World Health Organisation (WHO) Representative Office was officially established in Oman in 1974. However WHO has provided technical support to Oman since the ascent to the throne of His Majesty Sultan Qaboos bin Said in 1970. Since then more than six WHO representatives have headed the office. During this time, the 'Health for All Goal' and the 'Primary Healthcare' strategy has guided the WHO /government collaboration in the Sultanate.

The most noteworthy successes resulting from this collaboration include the development of efficient primary healthcare system, and relevant human resources for health as well as the establishment of district-based health management. Similarly, WHO has been an active partner in the MoH impressive malaria and polio eradication in Oman, and the control of other communicable diseases including tuberculosis, vector-borne parasitic

diseases such as leishmaniasis, schistosomiasis, zoonotic diseases and vaccine preventable diseases of children and adults.

WHO's programmes in Oman

Health promotion and disease prevention continue to be an important pillar of our work in Oman, and we have introduced in the past years innovative ways to link health to development at the community level and we initiated several community-based initiatives including healthy village project in Qalhat, a healthy city project in Sur, Salalah, Sohar and Nizwa Healthy Lifestyle Project.

Every year more than 70 WHO technical experts visit the Sultanate and many WHO-supported national activities take place. The main thrust of WHO support to the MoH currently is towards further development of the health services with a focus on innovative and modern ways for better health financing and management and also for consolidation of Oman's health achievements through quality assurance; examples include our current support to the public hospital autonomy scheme, evidence-based research and interventions, development of essential drugs and medicines management, community-based initiatives, health promotion and injury prevention, health information system and building capacity of the health providers as well as the health administrators.

We also continue our traditional support to the control of communicable diseases, outbreaks and disaster preparedness and responses as well as maternal and child health. Partnership development and alliance building is a key for implementation of all above mentioned interventions. WHO as a leading UN agency for health, has a key role in coordination between UN agencies and international donors interested in health development at the national, regional and global level.

Challenges

However, Oman is experiencing a demographic and social transition which is changing deeply the nature of health issues ahead. In a universally well-established healthcare delivery network such as in Oman, the challenge would be to make sure that aspects of persistent or newly-emerging vulnerability are identified and targeted. Modern ailments such as cancer, diabetes, hypertension, HIV/AIDS, malnutrition, mental disorders and substance abuse, road traffic accidents take up much more importance in such cases.

Where lifestyle and behavioural diseases and their underlying behavioural factors become dominant, it is important to acknowledge that health becomes the business of all and not that of the MoH alone. The individual, the family, the community, and non-health sectors and ministries alike are concerned, thus the need for a more accentuated consorted multi-sectoral

partnership in health. I have been posted in Oman since last April and I am very pleased to have discovered here an exemplary model of WHO-member state cooperation and that the WHO technical support has been effective.

In addition, we do take advantage in WHO of the Omani public health expertise and often we call upon many of our colleagues from Oman to assist other countries in the Eastern Mediterranean Region. Oman also plays an instrumental role in the formulation of the global health policies and leads the way in many areas among the Gulf Cooperation Countries. However, the shift in health priority poses formidable challenges for the country and for the WHO collaboration with the country. We have to always keep in perspective that we need to evolve dynamically to address the issues of the 21st century.

Future plans

We are quite aware in WHO that the rapid lifestyle changes leading to unhealthy dietary habits, limiting physical activities and the spread of tobacco use in Oman are at the basis of a dramatic rise in chronic diseases such as heart diseases, stroke, hypertension, cancer and diabetes and these are the most pressing emerging health threats in Oman today. The good news is that people can largely prevent and control these diseases by changing their lifestyles to more healthy ones. Thus WHO action will increase its focus on developing relevant multi-sectoral national strategies such as the strategy on diet, physical activity and health, implementation of the WHO global treaty on tobacco control and several interventions for behavioural changes including HIV/AIDS-related high risk behaviours as well as initiating health promotion leadership programmes.

All the wanted changes in lifestyle cannot occur without the community understanding and active involvement. We are intensifying our support for additional healthy cities projects and school health initiatives. Strengthening inter-sectoral collaboration and partnership for health development using the Healthy City settings is another opportunity that WHO should assist the government for its expansion throughout the Sultanate. On the other hand, we are also looking into ways to support the current national efforts to structure and improve post graduate medical education. Road traffic accidents are becoming a major concern because of the impact of road traffic accidents on the health system as well as the tremendous amount of productivity lost mainly among young people and we need to do more in this area.

MEDX to change the Medical landscape of Oman



MEDX 2007, billed as the first international medical and healthcare exhibition, will be opened on September 10th, 2007 by the **H.E Dr. Ali Jafer Mohammed**, Director-General of health affairs (MOH), at Oman International Exhibition Centre, Seeb and more than 4,000 trade visitors and buyers from the region are expected to visit the 3-day exhibition

Exhibitor participation from across the world would make MEDX the most comprehensive of the medical exhibitions in size, products and visitors. Aimed to showcase everything in medical and health care, it brings together the best in the business of hospital, diagnostic, pharmaceutical, medical and rehabilitation equipment, medical colleges and supplies for the future of healthy collaboration and progress in Oman and the Gulf region.

Further more it will serve as a platform for medical suppliers, industry professionals, government bodies, hospital administrators, doctors, nurses, students and other healthcare professionals to meet and interact.

MEDX 2007 will provide an excellent opportunity to the participants for marketing their products and services along with premier providers of medical technology and health care services worldwide. In addition to the comprehensive showcase, the participants will have a chance to interact directly with the key buyers and prime decision makers from the vast and remunerative markets of the Middle East. With the rise of Medical Tourism in the region MEDX 2007 facilitates in bring-



ing the best of medical and healthcare technologies and services; and acts as a platform for the participants to connect with the local and global market.

“MEDX will provide vital access for companies trying to penetrate the Oman medical and healthcare markets. It is an attempt to bringing global and healthcare technologies to one of the most vigorously rising region of the world”

MEDX, which closes on September 12th, 2007 will open up new avenues of opportunities and bring up a sea change in medical and healthcare sector in Oman. The exhibition is brought to you by Eastern Business Solutions (EBS), a Marketing and Management Solutions company based in Oman and Organized by Taj Majan International Exhibition (TMIE), one of the leading enterprises in organizing exhibitions in Oman.

Medical Services in Good Health



OER Dossier tracks the healthcare scenario in GCC region

With state-of-the-art technologies incorporated in the healthcare facilities in the GCC (Gulf Cooperation Council) the outlook for the region's medical services has never looked in better health, technology off course is proving to be a major driving force behind these super health services. Accord-

ing to experts IT is going to make the Middle East's healthcare the best in the world.

The rapid advancement of such healthcare providers in the Middle East is aided by the constant advance from IT vendors to constantly develop improved products. The highly competitive, healthcare market in recent times

has necessitated the increased use of technology among healthcare institutes in order to gain a competitive edge in the delivery of health services.

As the healthcare industry in the Middle East is growing rapidly, there is a critical need among healthcare institutes and government health organizations to adopt integrated IT

solutions capable of supporting their increased operations and minimize costs. Healthcare Solutions (HCS) has recently introduced the ASP Healthcare Model, an end-to-end back office web-based solution that can take care of the clinical, administrative and technological aspects of patient services. ASP Healthcare is the first healthcare portal in the GCC.

With the likes of Dubai Healthcare City (DHCC), King Fahd Medical City (KFMC) – and many more healthcare facilities just like them developing throughout the region, healthcare is forging ahead in the GCC. HIRAS, a unique healthcare information integration platform will enable DHCC to create electronic medical records. The system makes patient records available at the touch of a button and enables experts to make a quick diagnosis and plan early treatment.



There are many other companies looking to make an impact on the region's technology: The Cleveland Clinic, one of the USA's largest medical centres and a pioneer in healthcare technology

– with its new Virtual Visit teleconsultation service has its interest firmly rooted in Abu Dhabi. The Clinic, along with Abu Dhabi's Mubadala Development, is in the process of creating

Cleveland Clinic Abu Dhabi which is expected to be ready by 2010.

The Intel Company is increasing technical and doctor training support for a telemedicine programme at one of Lebanon's top hospitals. The telemedicine systems provide the hospitals with real-time video consultation between physicians' miles apart, and the ability to share data and to diagnose patients from afar. The innovation gives local doctors the ability to access the latest medical data and get second opinions from specialists and medical centres hundreds of kilometers away.

Xerox and Siemens are the other dealers leading the way in the Middle East's healthcare facilities. Xerox is bundling the Aycan X-ray print solution with the Xerox Work Centre M24. This bundle offers healthcare providers in the GCC with a complete solution, which allows them to print radiological and other medical images on plain paper at near film quality, thereby cutting costs effectively.

Then again, Siemens has announced that the Middle East region would be the first region to experience its Soarian Medsuite 4.0 technology which offers healthcare organizations an integrated HIS (Hospital Information System) that helps manage administrative, clinical, and financial processes, this in turn increases efficiency, productivity, and quality of care.

As it relates to the Gulf Cooperation Council States (GCC), the authorities controls the provision of healthcare services by acting as the owner, operator, and provider of medical services. Leaders across the GCC are aware now, that greater involvement of the private sector in future healthcare could save the government from soaring expenses. The ministries of health are increasingly focusing on policy



The Dubai Healthcare City (DHCC), an ambitious, multibillion dollar project aims at establishing a regional center of excellence which would attract world-renowned institutions and health care providers

making. The private sector will also have an increasing role in healthcare delivery and there is a need to have neutral healthcare regulators for both the public and private sector to set standards and implement checks.

The UAE has seen an escalating number of private healthcare providers entering the market. This has led to an effective healthcare insurance programme. One obvious consequence is the introduction of compulsory healthcare insurance for all expatriates in Abu Dhabi. The other GCC countries are following the same route, with healthcare insurance programmes either initiated or planned in most countries.

Alongside the growth in private healthcare facilities across the GCC there is an increase in the number of healthcare facilities that focus on preventive care, or the various elements of wellness

programmes. There has, until recently, been little focus on preventive care in the UAE. This is now changing, mainly as a result of the alarming increase in the incidence of diabetes, cancer and heart disease.

The Preventive Health Department is responsible for combating contagious diseases, carrying out vaccination, immunization, food control, quarantine, and providing health education in the field of maternity and child care and insuring environmental health and safety. Immunization against hepatitis B is carried out in the context of the nationwide immunization campaigns against contagious diseases and a pre-school immunization program is adopted as a regular practice. Efforts continue to eradicate tetanus, polio, measles and diphtheria. Qatar was one of the first countries to have added anti influenza vaccine B to their newborns' compre-

hensive immunization programs.

Oman has one of the most efficient healthcare systems in the Middle East & North Africa region, the driving force mainly being the rapid increase in population and the growing contribution of the private sector. The nation now boasts of the most efficient health care system in the Middle East, placing Oman at the 8th position on the WHO's overall best performing systems worldwide. Oman today, continues to lead the way in preventative medicine and medical education.

The direct healthcare costs in the GCC region are expected to increase five fold by 2025 to US\$60 billion from US\$12 billion now, with health risk factors, ageing, population growth and medical inflation contributing to the cost escalation – according to the AGCC Healthcare 2025 report by McKinsey &



Co Inc 'Healthcare in the AGCC – Challenges and Opportunities'. By 2025, the cost burden on cardiology will increase from US\$1.5 billion currently to US\$15 billion by 2025. Cardiology will make for 24 per cent of the healthcare costs followed by infectious diseases, maternal and prenatal conditions, digestive diseases, cancer and other diseases. The number of outpatient and inpatient visits is expected to grow 350 per cent in the UAE, Saudi Arabia and Kuwait; 260 per cent in Bahrain; and 310 per cent in Oman.

However the AGCC region has a shortage of nursing staff with only 4.2 nurses per 1,000 population in the UAE; 3 per 1,000 in Saudi Arabia; 4.3 in Bahrain; and 3.5 in Oman. The AGCC average of 4 nurses per 1,000 people in nearly half of that in OECD countries which have an average of 9.4. In the nursing staff, only 3 per cent are nationals in UAE while the figures are higher in Bahrain (60 per cent) and Oman (56 per cent).

It is quite evident that many more health projects are underway, exist or are being planned by the various governments and private corporations but listed below are some projects that represent some of the most successful achievements in the GCC region's health care sector:

The Dubai Healthcare City (DHCC), an ambitious, multibillion dollar project aims at establishing a regional center of excellence which would attract world-renowned institutions and health care providers. Also, the Tawam Hospital, a 469-bed tertiary care facility in Al-Ain, Abu Dhabi, partnered with Johns Hopkins Medicine International (JHMI) hospital has announced the opening of UAE's largest intensive care unit. This 20-bed utilizes electronic charting and boasts of its own satellite laboratory and pharmacy.

The American University of Beirut Medical Center which is a 140-year-old insti-

tution is a 420-bed, private, not-for-profit tertiary care facility. It is the primary teaching facility for the AUB Faculty of Medicine. This institution now offers a wide range of residency and fellowship programs for medical graduates as well as a nursing school and a variety of allied health courses. The Clemenceau Medical Center, despite its 106 beds, provides a scope of services and operates a full emergency department. It also holds some of the most technologically advanced operating rooms in the world. Among the wide range of programs, CMC offers a dedicated Breast Center, an Executive Health Program as well as other innovative centers.

Yet another is Weill Cornell Medical College in Qatar, the Qatar Foundation will begin the construction of what will become the College's primary teaching hospital, Sidra Medical and Research Center, a 350-bed, all digital, tertiary care facility. Supported by an endowment of \$8 billion granted by the Foun-

dation the inauguration of this center is planned for 2010. Hamad Medical City has planned one of the world's largest health care developments. The total capacity of this medical city is estimated at 1000 beds and includes three speciality centers of excellence: a pediatric tertiary care facility, a trauma center and a rehabilitation center. A three hundred bed nursing home and dialysis center are also planned.

King Faisal Specialist Hospital and Research Centre (KFSH&RC), this 844-bed tertiary care facility in Riyadh covers a total area of close to 1 million square meters, and includes research and educational facilities, it also employs international experts in various fields. The Center provides training opportunities in the form of residency and fellowship programs in 62 areas of expertise. The Saad Specialist Hospital which is a new ultramodern Oncology

Center, adding an additional 320 beds, is being completed within the complex. Also, Dhahran Health Center has long been a site of recruitment of foreign health care providers, many of which are U.S. board certified.

Of the recent developments in health-care around the GCC, Muscat's Apollo Medical Center has set up its telemedicine service. The UAE's Western Region Development Council, have opened two kidney dialysis units and a natural physiotherapy unit at Sila Hospital, the units are now ready to treat patients with renal and orthopaedic problems. Dubai-based pharmaceutical company Neobiocon, is introducing oral and nasal insulin treatments to the country for the first time this injection-free treatment is currently being developed by Biocon.

Neopharma in Dubai has set up Neo-Biocon, which will focus on develop-

ing biopharmaceutical niche products in key therapeutic areas such as oncology, diabetes, auto-immune disorders and cardiology. Also, Qatar will soon have the capability to implant electronically-operated artificial limbs. Amanah Capital, the Dubai based asset management company, has signed an agreement with the Emaar Healthcare Group to develop specialist healthcare facilities in Abu Dhabi. The tie-up will initially see a specialized medical facility for women and children developed on a 300,000 sqft site in the capital. This hospital will focus on gynaecology and obstetrics, neonatology, pediatric medicine, surgery and family medicine. To add to the list, the Tawam Hospital in Al Ain has set up an epilepsy monitoring unit which uses digital video imaging to study electrical activity in the brain and patients can be observed over several days with the new facility.

HEALTH CENTERS

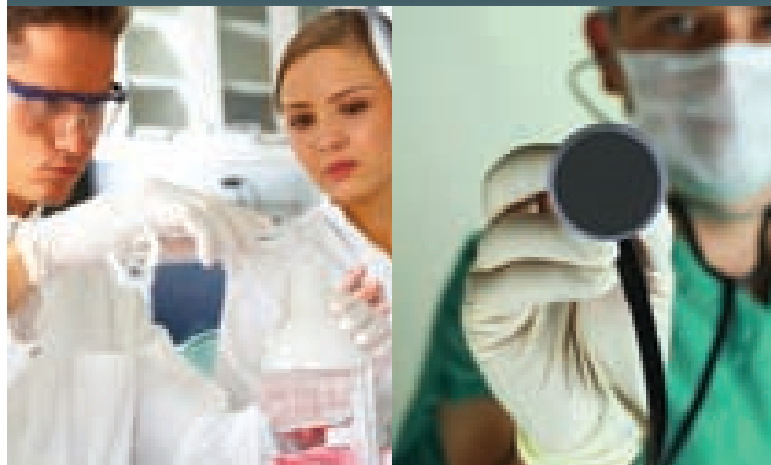
Lifelines of a healthy nation

The hospitals and extended health centers in Oman have made a remarkable progress to provide the best-in-the-class healthcare facilities in the Sultanate

Few years ago a significant percentage of the residents in Oman had to go out of the country for most of the critical health treatments. But the scenario has changed now as international class healthcare facilities have come up across the Sultanate. The government with the active participation of the private sector has ensured that Omani residents have access to best possible treatment for most of their health problems at affordable rate.

“The Sultanate of Oman’s achievement in the health sector, in a relatively short span of three decades, have been appreciated by the people of Oman and recognized by the international community. The Ministry of Health, through its five-year health development plans, is further improving its health care infrastructure, creating new institution and new programmes to fulfill the unmet needs and to meet new threats from emerging health problems,” said HE Dr. Ali bin Mohammed bin Moosa Minister of Health.

As per the Ministry of National Economy figures, in 2005, there were atleast 189 hospitals and health centers in



Oman. With new facilities opening almost every few weeks, the figure must have gone up significantly as you read this article.

A large number of hospitals and health centres are owned and managed by the government and its bodies. The most prominent government hospital in Oman is the Royal Hospital. Established in 1987, it is a large, tertiary, acute-care hospital which provides state-of-the-art services in the specialties and sub-specialties of medicine, surgery, pediatrics, obstetric and gynaecology, oncology and laboratory medicine. The hospital had 621 beds, bed occupancy of 67.3 percent and discharged 28,167 patients in 2005.

The other leading health institutions include Khoula Hospital, Sohar Hospital and Sultan Qaboos Hospital etc. The total manpower employed in the government sector in healthcare was 22,176 in 2005 – MOH 20,438, university 1,478 and police 260. They include 3,255 physicians and 181 dentists.

The private sector is expanding the healthcare facilities in Oman at a faster rate. Badr Al Samaa Group of Hospitals has five facilities – Al Khoud, Ruwi, Al Khuwair, Sohar and Salalah. Abdul Latheef, V T Vinod and P A Mohammed are the directors on the board of the hospital. On further expansion, they said: “We are planning to set up a Super Specialty Hospital soon in the Sultanate. This will be a great help not only to the nationals but also to the expatriates who seek treatment abroad for complex ailments. Our intention is to provide all kinds of advanced treatments in the country at economical rates.”

Apollo Medical Centre (AMC) has also come up as a popular name in the healthcare sector of Oman. AMC, in association with India based Apollo Hospitals' Group, is providing the most mod-



India's KIMS to set up hospital in Oman

The Indian healthcare firm Kerala Institute of Medical Sciences (KIMS) is setting up a 75-bed speciality hospital in Muscat. The hospital, KIMS Oman Medical Complex (KOMC), which is KIMS second franchisee in the Gulf, will start operation by the end of the current year as a multi-speciality medical complex with emergency wards, outpatient departments with 10 specialties, physiotherapy, emergency medical department and daycare centre.

Thirty doctors and 60-70 nurses and an equal number of paramedical staff drawn mainly from Oman, India, the Philippines, Pakistan and Bangladesh will run the hospital. “The objective of KIMS is to provide quality healthcare at affordable costs to nationals and expatriates. We have tied up with Quality Healthcare Australia (QHA) for assuring international quality standards for all its AGCC (Arab Gulf Cooperation Council) ventures,” KIMS Chairman and Managing Director M I Sahadulla said.

KIMS opened its first franchise in Bahrain, and has become a very successful venture with investors getting back their capital investments in three years, he added. Established in 2002, KIMS is a 450-bedded world class, multi-speciality and tertiary care hospital based in Thiruvananthapuram in Kerala.

ern state-of-the-art healthcare services under one roof with highly motivated and dedicated professionals.

Lama Polyclinic LLC is one of the largest and oldest healthcare groups in Oman. With three branches and over 26 services in different specialties, Lama Polyclinic offers healthcare with a human touch. Lama Polyclinic has a dedicated team of physicians, nurses and other healthcare professionals who provide an extraordinary level of knowledge, skill and compassion to every patient they serve.

Hatat Polyclinic, part of the well known Assarain group of companies, opened its doors in 1990. At that time there were relatively few private clinics and it was felt that there was need for a high quality, affordable medical service in the capital area. Since then, Hatat Polyclinic has grown considerably both in its client base and the range of services offered. The clinic has over 100,000 active patient records and this is steadily increasing. A fully operational branch at Athaiba has been added since 2003.

Atlas Star Medical Centre, Muscat, a part of the internationally acclaimed Atlas Jewellery Group, opened its doors to the public on August 27, 2004 with just five doctors on board. The centre, which is gearing up to be upgraded to a hospital status, now has over 28 doctors on its panel with over 86 nurses. Thus, the group – opened its first medical centre in January 2004 in Dubai – has been able to extend its success to Muscat. Further, the company seeks to expand its services to Sohar and Salalah.

By 2005, there were 713 private clinics in Oman. Majority were Muscat and Al Batinah regions. They included 112 dental, 217 specialist and 384 general clinics.

The Sultanate of Oman's achievement in the health sector, in a relatively short span of three decades, has been appreciated by the people of Oman and recognized by the international community



APOLLO MEDICAL CENTRE

CENTRE FOR MEDICAL EXCELLENCE



Apollo Medical Centre (AMC) has emerged as the most trusted healthcare name in Oman.

AMC provides the most modern state-of-the-art healthcare services under one roof with highly qualified and dedicated professionals.

AMC is associated with India based Apollo Hospitals' Group – Asia's largest and most trusted healthcare group – to bring in the best industry practices in Oman. It is termed as a 'Centre for Medical Excellence'.

AMC strives towards providing excellent healthcare that is integrated, accessible and affordable to improve health status of every individual in Sultanate. Apollo is trying to achieve this through total commitment to excellence in



Delegates from India at the Tele-medicine Seminar in Muscat

service with ethical conscience.

AMC has consultancy services involving a wide range of medical specialisations. They include excellence in Cardiology, General Medicine, ENT, General Surgery, Gynaecology and Obstetrics, Orthopaedics, Ophthalmology, Plastic & Cosmetic Surgery, Dermatology, Dentistry, Neo-natology and Paediatrics. AMC has a modern Intensive Care Unit (ICU) which is fully equipped to render speedy treatment to all critical illnesses. The emergency department operates round-the-clock and is well equipped and prepared to take care of all type of emergencies. Apollo also introduced in the Sultanate's private healthcare sector's sophisticated and most modern mother and childcare services as part of its multi-specialty medical facility located at Hamriya roundabout near Ruwi. AMC also has two state-of-the-art Operation Theatres.

In addition to appointing well-qualified and experienced doctors and paramedical staff, AMC has invested in state-of-the-art equipment for its various specialisations. The cardiology department is equipped with 2-D Echo, TMT and sophisticated ICU for the management of heart attacks and chronic heart dis-

eases, and prevention of cardiac disease as well. A 4-D sonography machine with colour doppler, the first and most modern installation in the private healthcare sector in Oman, and is available in the Radiology Department, along with the latest X-ray system with automatic film processor. The laboratory department's state-of-the-art equipment ensures speedy and accurate biochemistry, haematology, clinical pathology and microbiology tests.

First to launch Telemedicine

AMC, in association with Apollo Group of Hospitals, has recently introduced the Telemedicine Facility in Oman. The Under Secretary of Health Affairs inaugurated it. The residents of Oman can access the best of healthcare services from the world – renowned Apollo Group Doctors in India – by sitting here in Muscat. Apollo Telemedicine Network, inaugurated by the then President of United States of America, Bill Clinton in 2000 at Hyderabad, is the largest telemedicine network in Asia. Linked with over 100 destinations in India and abroad, Apollo Telemedicine has demonstrated the benefits of using technology for the benefit of humanity.

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Advertisement

AL AMAL MEDICAL & HEALTHCARE CENTRE

‘OMAN’S HEALTH SECTOR KEEPING PACE’

Established in 1995, Al Amal Medical & Healthcare Centre, Al Khuwair is one of the leading medical centres in Oman, extending personalised professional healthcare with an overall holistic approach and ISO-certified primary healthcare service issued by BSI-UK.

The clinic is well equipped with the most modern equipment and diagnostic tools, providing complete and comprehensive facilities under one roof, to provide the best medical care.

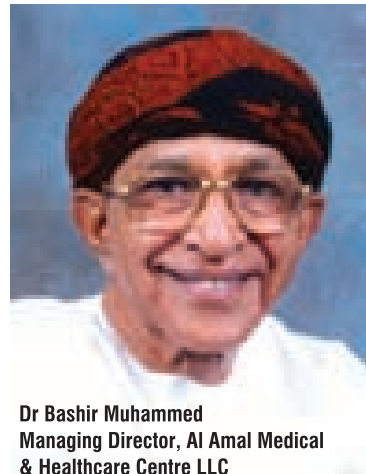
Dr Bashir M. Muhammad, Managing Director of Al Amal Medical & Healthcare Centre, speaks on the healthcare facilities in Oman in an interview with OER Dossier.

How do you find Oman's medical and health sector?

There has been rapid and satisfactory advancement of Oman's healthcare sector. As the healthcare industry in Oman is growing rapidly, it's also keeping pace with the international standards in medicine and allied sectors. The sector's progress has greatly been facilitated by the great vision and leadership of His Majesty, who has been taking personal interest in the improvement of the health of the people of the Sultanate. The role and contribution of the Ministry of Health is also of prime importance, which keeps itself updated on a regular basis. Private medical establishments are doing an excellent job by collaborating with the Ministry of Health and following its guidelines.

How do you find Oman's healthcare sector different from its neighbouring countries in GCC?

The healthcare industry in the Gulf is growing rapidly, and Oman is no exception. The health sector in Oman is more or less on the same scale as com-



Dr Bashir Muhammed
Managing Director, Al Amal Medical
& Healthcare Centre LLC

pared to other GCC countries in terms of facilities offered and government's encouragement to private initiatives.

How do you see the scope of Oman's medical and health sector?

Medical institutes in Oman are continuously adopting new technologies in IT and other cutting-edge technological solutions to remain abreast of the latest events. The future looks at the regulatory bodies to keep close watch on medical practice to control



Advertisorial

and supervise medical errors and unhealthy medical practice. The best way of medical practice is Evidence Based Medicine practice, which is not popular in the private sector, or following the code of ethics from the General Medical Council of the United Kingdom.

What are the ways and possibilities of improving the healthcare sector in Oman?

We need to adopt a holistic approach for a healthy society. First of all, we need to start addressing the issue from the root. We need to have a mass education programme of Omani citizens. This also involves introducing healthcare education programmes in schools and other educational institutions. We should proceed ahead with the creation of a knowledge-based society to spread awareness about healthcare. There is also a need to promote and inculcate stress-management techniques like Yoga, etc in today's faced-paced lifestyle of people. There should also be awareness about healthcare at workplaces.

Do you see any progress in alternative medicine in Oman?

Alternative medical treatment facilities have made tremendous progress in Oman for the last few years. We're seeing lots of clinics and medical centres offering Yoga, lifestyle management programmes, homeopathy, Ayurveda and lots of other facilities to the people.

How much importance do you think the concept of ergonomics hold at work places?

Ergonomics, in any industrial organisation, deals with providing ease of operation, comfort, and eliminating physical strain from a continuous or repetitive activity involved in production or operation of machinery. Vision, physical pressure required, comfort



of operation are all faculties which could deteriorate or become tiring if such considerations are ignored. The distance of the eyes from the computer screen glare, ease of operation of a lever, amount of physical pressure required for operating a heavy lever or switch, the illumination necessary for minute work places, noise levels at workplaces are all examples which would adversely affect the work if not taken into consideration.

Today, with industrialisation becoming more and more effective, the occurrence of health hazards, means and methods of reducing or eliminating such hazards has become important. All industries have adopted the principles of HSE (Health, Safety & Environment) for reducing loss of man-hours, providing a safe and healthy work atmosphere to the worker. In the oil drilling and exploration industry, the drilling rigs are examples where the work environment is hostile, and need of safety and protection is of paramount importance. Ergonomics and safety augment production in any industrial activity and need to be implemented to the fullest extent.

What training sessions do you provide to patients as well as outsiders?

Training to patients in the form of health awareness lectures, pamphlets, posters is given at Al Amal Medical & Health Care Centre. The consulting room of doctors have easy charts and pictures wherein the doctor explains the patient's illness, so he/she has better understanding of their ailments. In-house Continuous Medical Education (CME) is held every Thursday morning in the AMC Lecture Hall where all specialists and general practitioners give educative lectures, pertaining to their specialities for benefit of other doctors/visitors. CME programmes are also arranged and held by the Ministry of Health to ensure that all doctors and paramedical staff are abreast of the latest information in the field of medicine. Al Amal Medical & Health Care Centre had also undertaken to put up a Health Awareness Stall in the annual Muscat Festival. The general public was invited to have their blood pressure checked and blood sugar done, importance of proper diet, and benefit of exercise were given by the doctors/nurses manning the stall.

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ATLAS STAR MEDICAL CENTRE

STAR IN HEALTHCARE

Atlas Star Medical Centre, Muscat, a part of the internationally acclaimed Atlas Jewellery Group, opened its doors to the public on August 27, 2004 with just five doctors on board.

The centre, which is gearing up to be upgraded to a hospital status, now has over 28 doctors on its panel with over 86 nurses. Thus, the group – opened its first medical centre in January 2004 in Dubai – has been able to extend its success to Muscat. Further, the company seeks to expand its services to Sohar and Salalah.

“Well qualified and experienced doctors, para-medical staff, with specialised treatment facilities such as operation theatre, labour room, ICU, 24-hour casualty, in-patient facilities and a full-fledged pharmacy all enable Atlas Star Medical Centre provide the best of healthcare services. The dedicated team provides quality medical services of international standards in a caring and friendly ambience. The centre has set in place a number of systems and procedures to ensure that patients are provided the best services. There is a strong belief that a visit to the centre should be a comforting experi-



ence. All staff members are well trained to understand and meet the needs of the patients,” says Dr Rohil Raghavan, director in-charge, Atlas Star.

The centre is spread over an area of 12,500 sq ft at Al Ghoubra. “The huge space allows the centre to provide medical services on international standards. Sufficient space is given to various specialities offered by the centre to that patients can meet their needs in total comfort.

Atlas Star Medical Centre is the preferred choice of many top companies in Oman to provide best healthcare services to their employees. The Centre is not only thronged by patients from Muscat but people from far off places

like Sohar, Ibri, Sur and even Salalah come to Atlas for treatment. It has an excellent reputation in the Sultanate as patients who have been treated by Atlas refer it strongly among their social circle. Its patients are its best goodwill ambassadors.

Atlas Jewellery Group is a well known name across the world. Established in the year 1988, the group under the leadership of M M Ramachandran has strongly earned a reputation for itself. Today, the group enjoys very good patronage and trust. The goodwill enjoyed has acted as a catalyst in the group venturing into the healthcare, a field which the group strongly believes is its commitment to the society.

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BADR AL SAMAA GROUP OF HOSPITALS

MOST TRUSTED NAME IN THE HEALTHCARE

Badr Al Samaa is a well-established entity in the private health care sector in Oman.

It recently opened the fifth branch in Al Khoud (near roundabout) as part of its expansion strategy. HE Dr Juma Ali Al Juma, Minister of Manpower, inaugurated the new facility. Sprawling over more than 5,000 sq m area and two floors, it is equipped with three operation theatres, maternity ward, ICCU, neonatal ICU and 40 inpatient beds. The centre will initially have the services of

20 highly qualified doctors including supers specialties like cardiology and urology. A full-fledged pharmacy is also located in the clinic premises. The group, already in the limelight in Gulf for decades, first came to the Sultanate five years ago with a maternity and surgical centre in Ruwi. Its round the clock service at an affordable cost for everyone, for the first time in Oman, was an instant hit. Proving the pessimists wrong, the overwhelming response from the public inspired the management to spread its footprints across Oman.

A full-fledged medical centre in Al Khuwair in January 2005 was followed by another one in Sohar that opened in July 2006. One success led to another and the group's management was inundated with requests from the public to open more health centers in their respective areas. Salalah Private Hospital has been taken over by the group and it will be now known as Badr Al Samaa Private Hospital. All services hitherto available at Badr Al Samaa centers will be made available in Salalah in the coming days.

Already credited with many firsts in Oman, Badr Al Samaa recently introduced live 3D Echocardiography technology in Oman for the first time. The

most advanced echocardiography machine from Philips has been installed at Badr Al Samaa's Ruwi facility.

Following the international health informatics' standards, Badr Al Samaa has become a paper free establishment. All the records pertaining to a patient, including the case file is maintained in the soft copy using the Doctors Desktop Software. This has made the retrieval and maintenance much easier. As all the branches are linked through a common network, the doctors are able to access the files, evaluate the condition of the patient and give recommendations and suggestions from anywhere. An MRI Scan Centre will also be set-up shortly at the Ruwi branch.

Abdul Latheef, V T Vinod and P A Mohammed are the directors on the board. On further expansion, they said: "We are planning to set up a Super Specialty Hospital soon in the Sultanate. This will be a great help not only to the nationals but also to the expatriates who seek treatment abroad for complex ailments. Our intention is to provide all kinds of advanced treatments in the country at economical rates."

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Al Khoud Branch



HATAT POLYCLINIC LLC

A PATIENT-FRIENDLY CLINIC

Hatat Polyclinic LLC, part of the well known As-sarain group of companies, opened its doors in 1990.

At that time there were relatively few private clinics and it was felt that there was need for a high quality, affordable medical service in the capital area. Since then, Hatat Polyclinic has grown considerably both in its client base and the range of services offered. The clinic has over 100,000 active patient records and this is steadily increasing. A fully operational branch at Athaiba has been added since 2003.

Says Dr. Donald Mowat, Chief Medical Officer, Hatat Polyclinic, "The polyclinic has X-ray and ultrasound units for diagnostic purposes, the high-tech laboratory is designed as a referral centre and is quipped with the latest equipment for haematology, serology, hormone assays, immunochemistry, biochemistry, microbiology and parasitology. Echocardiography, stress testing colour doppler and carotid scanning are also available. A physiotherapy unit is situated in the clinic



and has state-of-the-art equipment so that sports injuries, musculoskeletal and neurological problems can be dealt with efficiently by our trained staff. Clinical services are provided by family practitioners and three general physicians together with psychiatry, obstetrics and gynaecology, ophthalmology, dermatology, paediatrics and radiology specialists. The physicians are backed up by fully, qualified nurses and ancillary staff."

The polyclinic also has a dental clinic, fully equipped to perform conservative dentistry, prosthetic dentistry, including crown and bridge work, periodontal treatment, preventive dentistry, minor oral surgery procedures and preventive orthodontics. Hatat Polyclinic offers company medical schemes, family packages, executive health packages, antenatal packages and an eye clinic fully equipped to deal with all routine out-patient eye problems including minor surgery. Hatat Polyclinic has three associate special-

ists and four visiting specialists:

Oman's role in public health and prevention of diseases such as Malaria, Polio and Hepatitis B is second to none and we at Hatat Polyclinic are committed to being a part of this. Hatat Polyclinic is a recognised immunisation and immigration visa medical facility. We are also approved for outpatient maternity services. We are also heavily involved in occupational health programmes within the oil industry. Hatat Polyclinic opened its Athaiba Branch in August 2003 to serve the health needs and demands of the growing population in the area. Among the services offered there, we have a full time general practitioner, a well equipped dental centre and a gynaecology / obstetrics clinic. A full-time paediatric service will be available shortly. Our philosophy of providing quality healthcare at affordable prices and above all with a human face stands us in good stead.

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LAMA POLYCLINIC LLC

HEALTHY PERFORMANCE

Lama Polyclinic LLC is one of the largest and oldest healthcare groups in Oman. With three branches and over 26 services in different specialties, Lama Polyclinic offers healthcare with a human touch.

Lama Polyclinic has a dedicated team of physicians, nurses and other healthcare professionals who provide an extraordinary level of knowledge, skill and compassion to every patient they serve.

Lama Polyclinic welcomes patients from every walk of life and does its best to ensure the greatest patient comfort while providing outstanding comprehensive care. Patient care is facilitated by a fully computerised and networked Hospital Information system, a fully digital Radiology Department and a state-of-the-art Clinical Laboratory. It also offers facilities such as Radiology that has the latest 700MA, 125KW model X-Ray equipment installed in the polyclinic enables all routine X-Ray requirements; Ultra-



Dr Philip Raju, General Manager



Sohar Branch

sound in which high-end ALOKA and ACUSON scanners are used for general sonography and obstetrics study; 3D Echocardiogram that has the latest ACUSON/SIEMENS echocardiogram machine manufactured in the US enabling all the requirements of ultrasound procedures; Pathology, offering chemical analysis, microbiology, hematology and biochemistry among others; ECG which has modern 3-channel Siemens cario-stat machine with ancillary equipment that facilitates a broad range of patient requirements; Visa medical / immunisation / health check-up for insurance, that provides visa medical for pre-employment at a very affordable price; treadmill; in-patient service at MBD branch where patients are taken care

of by special nurses who are experienced in day care services; pharmacy; ambulance service, etc.

Lama Polyclinic LLC has consistently expanded and upgraded since its opening in 1988 with almost all specialties under one roof. It has around 40 qualified doctors having 10 to 30 years experience in their respective fields. Lama Polyclinic offers services through departments that include general medicine/family medicine, internal medicine, paediatrics, orthopaedic, ophthalmology, urology, general surgery, obstetrics, gynaecology, dermatology (skin), homeopathy, physiotherapy, dental surgery, otolaryngology (ENT), etc.

Lama Polyclinic prides itself on providing the best possible treatment combined with a caring attitude and modern technology. It has been highly successful in providing the best possible health care because of the total team commitment of clinicians, nurses, and a hospital administration, which is dedicated to insuring optimal support for all its activities. Lama Polyclinic is mindful that its performance and reputation are predicated on its devotion to achieve complete patient satisfaction. From its simple consultancy to general surgery or any other treatment, it strives for the highest possible levels of satisfaction among patients and employees. Lama has started a new branch in Sohar.

It has taken over International Medical Centre in Ruwi and Phillip Raju is the CEO. Ayurved is being started in Al Khuwair branch – franchise of Indian counterpart. MRI and PAC systems are in the process of being installed.

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By Dr. Rashid Khalfan Al-Abri

Consultant Otolaryngologist, Head Quality Management Department,
Head ENT Unit, Department of Surgery, Sultan Qaboos University Hospital

The Learning Organisation

The Learning Organisation is a concept that is becoming an increasingly widespread philosophy in modern healthcare institutes. The concept of the learning organisation is that any successful organisation must continually learn and adapt in order to respond to change in environment and to grow. Any organisation that wants to implement a learning organisation philosophy requires an overall strategy with clear, well defined goals. Once these have been established, the tools needed to facilitate the strategy must be identified. The building blocks of a learning organisation are, initially individuals and then teams, who create, share and act on collective learning, such an organisation operates an organisational learning cycle, where new knowledge created, captured, shared and implemented. In a learning organisation, managers – supported by human resources department professionals – have a key role in creating opportunities for learning and sharing learning in work, whether for individuals and /or teams.

There are five disciplines which are crucial to a learning organisation and should be encouraged at all times. These are:

Team Learning: is a closed system in which the energies of individual members work at cross purposes to maximise the success of the team.

Shared Visions: towards generating a shared vision, large numbers of people within the organisation must draft it,

empowering them to create a single image of the future.

Mental Models: these are ‘deeply ingrained assumptions, generalisations, or even pictures and images that influence how we understand the world and how we take action.

Personal Mastery: can be defined as the process of continually clarifying and deepening an individual’s personal vision.

Systems Thinking: shows that the essential properties of a system are not determined by the sum of its parts but by the process of interactions between those parts and allows interrelationships between systems and teams at the same time it allows understanding the source and the solutions to modern problems through linear and mechanistic thinking.

Ways towards learning organisation

The first step is to create a timeline to initiate the types of changes that are necessary to achieve the principles of a learning organisation: Stage one is to create a communication system to facilitate the exchange of information, the basis on which any learning organisation is built. The use of technology has and will continue to alter the workplace by enabling information to flow freely, and to ‘provide universal access to business and strategic information’. It is also important in clarifying the more complex concepts into more precise

language that is understandable across departments. Stage two is to organise a ‘readiness questionnaire’: a tool that assesses the distance between where an organisation is and where it would like to be, in terms of the seven dimensions. This is administered to all employees or a sample of them, and will develop an assessment profile, used to design the learning organisation initiative.

Stage three is to commit to developing, maintaining, and facilitating an atmosphere that garners learning. Stage four: with the help of all employees, create a vision of the organization and write a mission statement. Stage five is through training and awareness programs, try to expand employees’ behaviours to develop skills and understanding attitudes needed to reach the goals of the mission statement, including the ability to work well with others, become more verbal, and network with people across all departments within the organisation. Stage six is to “communicate a change in the company’s culture by integrating human and technical systems”.

Stage seven is to initiate the new practices by emphasising team learning and contributions because they will become more interested in self-regulation and management, and be more prepared to meet the challenges of an ever-changing workplace. Stage eight is to allow employees to question key business practices and assumption. Stage nine is to develop workable expectations for future actions. Stage ten is to remember that becoming a learning organisation



tion is a long process and that small setbacks should be expected.

Learning organisation & healthcare education

The aims of professional healthcare education are to educate healthcare persons with up-to-date knowledge and skills either theoretical learning through attending courses or practical through training programmes. The core purpose of healthcare education is promoting quality in healthcare service by having competent and safe persons. All patients are entitled to high quality care.

Organisational knowledge is stored partly into individuals in the form of experience, skills and personal capability, and partly into organisation, in the form of documents, records, rules, regulations and standards, etc. Therefore, to create learning environment between individuals and the organisation to facilitate interaction and strengthening of each other's knowledge base becomes the main task for management. So, Organisational learning is collective learning. The healthcare professionals are obligated both to acquire and to maintain

the expertise needed to undertake their professional tasks, and all obligated to undertake only those tasks that are within their competence. They are obligated to acquire Technical knowledge in their fields of work.

In a learning organisation, leaders are designers and teachers. They are responsible for building organisations. Leaders should promote the Systems Thinking concept and encourage learning to help both the individual and organisation in learning. It is the leader's responsibility to help restructure the individual views of team members. For example, they need to help the teams understand that competition is a form of learning; not a hostile act and a concept of learning from mistake. In addition, management must provide commitment for long-term learning in the form of resources. The amount of resources available (money, personnel and time) determines the quantity and quality of learning. This means that the organisation must be prepared to support this.

A learning organisation encourages

its members to improve their personal skills and qualities, so that they can learn and develop. They benefit from their own and other people's experience, whether it be positive or negative. In a learning organisation there are more opportunities to be creative and it ensures that any individual will be able to cope rapidly with a changing environment and moves freely within the organisation. Effective leadership is the very first thing needed to create a learning organisation, not based on traditional hierarchy, but a mix of different people from all levels of the systems to lead in different ways.

Technological development may replace human resources in some other sectors, but not in the health sector. In the health field, there are very few options for equipment to replace humans. This is one of the reasons explaining the high demand for skilled health professionals perpetually all over the world. Another reason, which necessitates developing health professionals continuously, is the nature of their duties. Since they are dealing with sick human beings, poor performance can cost lives.

Clinical Technology in Oman

By **Gautam Dey**, GM-Life Care Division & Chief Strategy Officer, Imtac LLC



Medical devices cover a wide range of consumables and equipment, from simple tongue depressors to complex haemodialysis machines and Magnetic Resonance Imaging (MRI) scanners, although they exclude infrastructure, such as buildings or power supplies. Devices of varying complexity are used at all levels of health services and often require substantial capital investment. The right choice of medical device technology is crucial to health services and has implications in terms of patient care and in the prevention of disease, disability and death.

A national strategy for medical instrumentation should be based on a

government policy, within an adapted regulatory framework. For example, it is important to understand the drivers behind clinical services delivery, and the strategic goals as applicable to a specific country. The Sultanate is a geographically spread arena, unlike most of its GCC neighbors, and hence a well established primary care set up, leading to regional referral centers and tertiary care hospitals is the format of choice in designing the clinical services delivery model. Also, with the strategic goal of building an Integrated Health Network (IHN), it is important that investments in medical instrumentation take into account connectivity requirements and compatibility with existing and planned IT investments. This also

has to fit with the realities of national income & GDP, and the fact that over 70% of the population is citizens. Private sector investments in Healthcare and the role of payors such as insurance companies also have an impact on how healthcare policy is defined and technology investments made.

The Ministry of Health in Oman is the custodian of Healthcare Policy formulation, and also has ownership of over 80% of the care provider facilities as in Hospitals and Health Centers. The MOH works closely with the World Health Organization (WHO) and has a sound policy framework and technology vision. This has led to establishment of clear cut guidelines

relating to investments in medical technology in alignment with the national health vision.

Hospitals & Health Centers in Oman are equipped with current state of the art technology, with a strong focus on connectivity and Interfaces with clinical information systems. Medical Devices are governed by guidelines related to quality and patient safety norms as laid down by the US FDA and European CE standards. Vendors are also measured by their ability to adhere to service level agreements relating to warranty and post warranty support, as well as preventive maintenance.

There is also a strong focus on safe, cost effective and optimal usage, through focused investments in training for technicians and operators. Omanisation guidelines are followed in order to eventually achieve self reliance in the deployment and ongoing operations of medical technology.

Most Global brands in clinical technology – Philips, Siemens, GE, Toshiba, Hitachi, and Cardinal Health etc. – are strongly represented in Oman. Local partner companies such as IMTAC, Muscat Pharmacy, Waleed Pharmacy, Ebin Rushed Pharmacy etc. have certified technical specialists capable of



handling installation, commissioning, end user training and support services. The government actively encourages local vendors to enhance competence and service delivery levels, and work as partners in achieving the national health vision.

As in most mature healthcare delivery models, radiology and acute care corner the lion's share of medical technology investments. Integrated Patient Monitoring Systems, Ventilation devices, X-ray, Ultrasound, MRI scanners, dialysis, orthopedic & neurosurgery instrumentation, Trauma Care systems, Surgical & Diagnostic Endoscopy, Anesthesia Workstations, Cardiographs, Ophthalmology Equip-

ment, and Laboratory Analysers etc. have been installed at referral & tertiary care facilities. Focused investments have been made in terms of Diagnostic & Disease Surveillance Centers & Blood Banks. Also, with the strong focus on primary care, Health Centers have been established across the length and breadth of the Sultanate equipped with basic diagnostic and laboratory instrumentation.

Many developing countries, despite huge investment, have yet to realize that the procurement & management of medical devices is a public health priority. This often means that products are unwittingly produced and procured that do not meet internation-



al standards of efficacy, quality, safety and information exchange. However, the Ministry of Health has a clear focus and strategic understanding of the importance of clinical technology. The welfare and treatment of patients relies on the ongoing management, integration and upkeep of the thousands of pieces of clinical, biomedical, and diagnostic equipment in the hospital. While this has been daunting, costly, and time consuming, it is also an area where Oman has consistently outperformed its GCC brethren on WHO benchmarks.

Strong health systems, as in Oman, invariably rely heavily on access to, and use of clinical technologies. Together, they form a dense mesh throughout the health services into which they are interwoven. Robust medical technologies are one of the most fundamental aspects of the framework which underpins the sustainability and self-reliance of Oman's healthcare delivery system.

Over the last decade, the need to develop and organize new ways of providing efficient health-care services has been accompanied by major advances

in information and communications technology (ICT). This has resulted in a dramatic increase in the use of ICT applications in health care, leading to integrated health networks and e-Health services delivery. The Sultanate, with its national Digital Oman vision, is leading the way towards the integration and assimilation of clinical & ICT technology into an e-Health strategy, which when fully realized will translate into tremendous clinical and workflow benefits, touching the everyday life of citizens & health-care workers across the continuum of care.

ADVANCED MEDICAL INSTRUMENTS COMPANY LLC

QUALITY AND EFFICIENT SERVICES

Advanced Medical Instruments Company LLC, part of AMICO Health Care Group with its headquarters in Jeddah, Saudi Arabia, commenced its Oman Operations in 1975.

AMICO Group has a strong network in 15 Countries with over 20 branches

throughout the Middle East, that includes branches in Saudi Arabia, UAE, Egypt, Iran, Lebanon, Syria, Jordan, Kuwait, Oman, Qatar, Bahrain, Sudan, Pakistan, Yemen and Algeria.

AMICO's success is noted in its vision, dedication and entrepreneurial spirit. 'Think globally, act locally' is the precise definition of the company's culture. The company places high value on the relationships with its business partners and to its commitment to long-term mutual success. The company continues to invest significant amounts for educational and skill transfer purposes of its customers and staff.

AMICO is a leader and pioneer in a number of medical fields. The company markets and services a broad line of surgical and diagnostic equipment and devices used in Ophthalmology, ENT, Dermatology, Neurosurgery, Orthopaedics and Plastic surgery. With its corporate headquarters in Jeddah, Saudi Arabia, AMICO's divisions are successfully engaged in marketing, servicing and customer support.

Major areas catered to by AMICO Oman

include, complete range of instruments, equipments and consumables for Ophthalmology, ENT, Dermatology & Orthopaedics optical equipment, frames, lenses, contact lenses, lens care products and lens laboratory machines; transportation, storage and shelving systems for medical facilities; home health care products; OT tables, pendants and lighting systems; general medical equipment.

AMICO Oman represents on exclusive basis world leading manufacturers. Some of its important Principals include Airsep Corporation, Arizant Medical, Arthrex Inc., BD Ophthalmic Systems, Bien Air, Biomet, Briot, Ciba Vision, Cure light, Cutera, Cynosure Inc., Edge Systems, Essilor, Frastema, Fred, Viasys (GSI), Gyrus ENT, Heine, Interzeag Int'l, Katena, Kowa, Medel, Metro Int'l, MG Electric, Nidek, Nonin Medical Inc., Reliance, Tomey, Trumpf, and Volk.

In accordance with the group work culture, AMICO Oman continues to provide its customers with quality products, efficient & prompt services and after sales support.

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Salalah
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Company will
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wires for the first
time in the region

US-based Ascent Medical Technology Fund II and Salalah Medical Supplies Manufacturing Company (SMSMCo) is readying its joint venture company for a stock market listing within three years, according to Peggy Farley, president and CEO of Ascent Capital Management, the advisor to the Fund.

The Ascent Medical Technology Fund II, L.P. (the Fund) was established by Ascent Private Equity II LLC to make privately negotiated investments in seed, early and mezzanine stage growth companies principally in the medical device industry and, to a lesser extent, in other medical technology industries, particularly life sciences..

The joint venture company created by SMSMCo and the Fund, Salalah Medical Device Manufacturing Company, is a fully integrated medical manufacturing capability in Salalah, Oman. Farley said that although the first products off the production line are not due until early 2008, demand for product from the new medical manufacturing unit is high and that an IPO could be as early as 2010. The joint venture is set to tap into the US \$800 million a year guide wire market with the product development and manufacture of guide wire

IPO for a US-Oman healthcare JV



products and surgical kits. "This is a product line with broad applications for interventional medical procedures. The guide wire product addresses a growing demand by medical specialists and is a natural extension to SMSMCo's existing products and skills, hence we have been able to deploy so swiftly," said Farley.

"Guide wires are used for percutaneous access procedures (through the skin), cardiac angiographies and angioplasty procedures. They have broad

and deep demand by global practitioners and we are confident of success of this product line," Farley concluded. The Original Equipment Manufacturer (OEM) facility will also invest in research and development.

"Critical is the ability to create prototypes for new inventions. Our joint venture will evolve to do that. It will also evolve to manufacture innovative and existing devices for the world markets," said Farley.



New Horizons in Dental Care

OER Dossier summarises the state of dental sector in Oman

Dental treatment in Oman is of international standards. Overall, there were 112 private dental clinics in Oman as on 2005 as per Ministry of National Economy – Muscat 60, Al Batinah 28, Dhofar 7, ADH Dhahirah 7, AD Dakhliyah 5, ASH Sharqiyah 4 and Musandam 1. In addition, the dental related services are available in majority of the government hospitals. According to the Ministry of Health, as on 2005, there were 168 dentists in Oman – 99 expatriates and 69 Omanis.

The treatment costs vary to some extent but not much. Many dentists have their own work rooms and technicians who produce crowns, bridges and prosthetics, and these speeds up treatment. Several dental clinics at present have internationally trained dentists who provide a wide range of dental services to patients with the most up to date technology and equipment. Aesthetic dentistry is now very advanced in the country and you are now faced with many options available to you. Dentists in Oman utilize the latest technology and techniques, in

combination with 'state of the art' dental materials. Restorative dentistry in particular, has immensely benefited from these developments, starting from composite fillings, right through to Ceramic inlays or veneer on lays'. With the dental facilities offered at present, venturing out for treatment is not required now because even destroyed teeth can be reconstructed with Root Canal Therapy and aesthetic posts, procedures which are carried out here. The reconstructed teeth are covered by a crown, which is often made of metal-free ceramics. After this process the teeth have a high degree of strength and aesthetic qualities which could not have been imaginable before.

The dental scenario in Oman is very different from earlier times, today's high-tech dental materials and techniques available may also be used to restore a missing tooth or teeth. Also, implants may be an excellent option for restoration; this is 100 per cent safe and is associated with very high success rates – up to 95-100 per cent in some cases. Full dental insurance can be very expensive and if, extensive cover is what

you desire then you must purchase a 'gold standard' health plan. Emergency fillings and extractions are normally included in standard health plans, but when it comes to more specialized treatment involving crowns, bridges and other prosthetics, the costs rise considerably. Even 'gold standard' policies have omissions, with regard to the content of fillings, the number of visits to a dentist and the volume of work carried out in any year. Policyholders also need to check that cover includes x-rays and simple cleaning. Cosmetic procedures and children's orthodontics are not included in most plans and if they are, then premiums are usually high.

Dental concerns remain a major public health problem in Oman, affecting 70-80 per cent of schoolchildren and the vast majority of adults. The Ministry of Health five year health plan (2006-2010) foresees that the changing living conditions and bad dietary habits will continue to give impetus to dental woes, this in turn is due to the growing consumption of sugars and inadequate exposure to fluoride.

SMILE DENTAL CLINIC

BRINGS THE SMILE BACK ON YOUR FACE

Generally dental clinics are perceived to be dealing with the problems related to the teeth only.

But comparing with the best international standards and practices in the dental branch of the health sector, Al-Ghubra based Smile Dental Clinic promises to keep your smile intact on your face by offering a range of best in the class dental specialty treatments. Smile Dental Clinic's team of specialists is led by Dr. Manoj Thomas, Dental Surgeon & Prosthodontist. "Our team of experts includes Dr. Sanjay Labh (Specialist Orthodontist from UK) and Dr. Viji Matthew (renowned Dental Surgeon), with the help of state-of-the-art equipment in the clinic, have provided specialty treatment to many people that has changed their entire personalities (picture on right). Smile Dental Clinic is the preferred choice as we provide all kinds of special dental treatments under one roof," says Dr. Thomas. The clinic is well known for providing the following kinds of treatments:

Aesthetic and Cosmetic Treatment: With many people including males who are giving special emphasis on their aesthetic appeal as part of their overall personality,



Dr. Manoj Thomas-Director & Prosthodontist, Smile Dental Clinic

Smile Dental Clinic is thronged by numerous people to make their teeth and smile look better by way of smile designing, teeth whitening and laminate veneers which reduces space between teeth and thereby have better smiles. They even treat broken teeth caused due to accidents as well.



A complete full mouth rehabilitation

Prosthodontia: For those who have lost their teeth due to accident or any other reason, the clinic offers solutions like artificial replacement of lost teeth by fixed or removable partial dentures consisting of ceramic crowns, fixed ceramic bridge, single ceramic crown, fixed implant denture and removable complete dentures.

Endodontic Treatment: Most of us ignore cavity in our teeth unless and until it results in unbearable pain. It ultimately leads to severe dental decay that affects the nerves and blood vessels. The clinic gets many such patients and they are

treated through Root Canal Treatment (RCT) with great precision to correct their teeth without extraction of teeth.

Oral Surgery: This is applied by the clinic in cases like surgical extraction of impacted teeth, extraction of decayed teeth, root stumps, apicectomy, alveoloplasty, periodontal surgery etc. Pre-prosthetic surgery, operculectomy and frenectomy are done with utmost care and least pain.

Paedodontics: Many parents ignore minor problems such as tooth decay, thumb sucking and mouth breathing in their children at a very young age, which in turn leads to malocclusion and proclination of teeth, while they reach adulthood. This kind of problems is very well corrected in the clinic in young age itself.

Smile Dental Clinic also provides preventive treatment for tooth decay in children by using pit & fissure sealants and intensive fluoride therapy.

Orthodontic Treatment: Crowded, protruded, irregular and overlapping teeth affect the smile and personality of any individual. Smile Dental Clinic corrects the anomaly by advanced straight wire techniques where bracelets are fixed on each tooth to give a perfect dentition to the person and thereby a new confident smile.

Contact:
Smile Dental Clinic
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Advertorial

IMTAC LLC

NEW FRONTIERS OF MEDICINE

The confluence of information science, computer science and healthcare has been greatly successful in improving the quality of health services and optimum utilisation of resources, says Santanu Biswas, Head - Technology & Consulting Services, Life Care Division, IMTAC LLC

Currently, health and education sectors are the largest sectors in any Gulf economy after oil and gas. Since the approach to healthcare by all the Gulf countries is to position it as the social responsibility of the government, there is a major focus on optimising healthcare expenditure to achieve maximum social benefit. To optimise the healthcare sector and effectively utilise the existing resources, health ministries across the Gulf region are relying heavily on IT solutions and integration services. Oman is no dif-

ferent and the steps undertaken by the Ministry of Health have been focused on ensuring a sustainable environment for technology led initiatives and services and the benefits to the citizens that accrue from them.

Oman today has one of the most efficient healthcare systems in the Middle East & North Africa (MENA) region. There is rapid growth in the demand for services, facilities, pharmaceuticals, qualified personnel, equipment and systems to meet the modern challenge of delivering healthcare in today's fast changing environment. It is being driven predominantly by a rapid increase in population, the growing contribution of the private sector, and the increased demand for medical tourism. Oman is likely to continue to experience a sharp increase in demands made on its healthcare system, with increased population, an aging society, and chronic conditions such as obesity, diabetes and cardio-vascular diseases on the rise.

Industry authorities speak in one voice to proclaim the benefits of implementing process automation solutions in the area of electronic health records, clinical and operational automation through IT systems, medication management, pharmacy and drug distribution. These are areas where lack of systems, processes and information are leading to significant inefficiencies and also where errors are common

during every step of the clinical experience and have been cited as a huge concern by patient safety experts from across the healthcare industry. This has recently been highlighted as a key concern and area for immediate improvement by ministries and health authorities in Oman.

That is why it is vital for healthcare organisations to choose technology that can help them achieve their strategic, as well as their tactical, goals. It is also vital for healthcare organisations to optimize the resources required to build and maintain their integrated systems. Therefore, they must choose solutions that allows them to integrate quickly and easily, and provide excellent systems management capabilities. Healthcare informatics and clinical technologies are the way ahead.

Healthcare or clinical informatics is broadly defined as the use of computers and information technology in the provision of patient care. They consist of automated systems that serve as a tool to inform clinicians about tests, procedures and treatment in an effort to improve quality of care through real time assistance in decision making and to increase efficiency and decrease unnecessary utilisation. It comprises systems that can capture, store and distribute all relevant clinical and socio-economic data disclosed by the patient and others, as well as observations, findings, therapeutic interven-



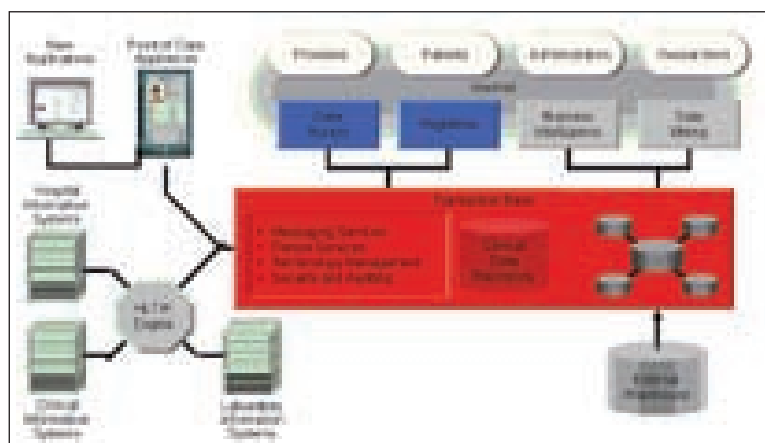
tions and prognostic statements generated by stakeholders in the healthcare continuum.

The growth in healthcare informatics is very strong in the areas of hospital information systems, clinical sub-systems like pharmacy management systems, radiology information systems, picture archival and capture systems, medication management & automation systems, e-health services, and laboratory information systems.

In order to benefit from the advances in technology and overcome the shortage of clinical resources and reducing budgets, as well as improve the overall quality of care delivery, government healthcare organisations are more readily embracing e-health services, including Universal Health Record (UHR) systems. UHR provides a single, comprehensive, and portable view of a person's medical history and care. Technology solutions and services are focused to deliver tangible and measurable business benefits across the spectrum of its offerings. The key stated objectives of introducing integrated clinical and back end applications at healthcare facilities can be:

Improve Efficiency

- Reduction in human resource re-



quirements through decrease of re-work and improvement in operational efficiency

Streamline process

- Improve access to patient information and enhance the quality of Patient Care
- Improve quality and fast turnaround of diagnosis availability and integration of decision support systems

Enterprise availability

- Improved clinical information logistics by introducing the online availability of diagnostics (images & reports)
- To provide the ability for referring clinicians to review their patient's clinical information anywhere in the enterprise

Telemedicine

- Sharing of data between locations and external facilities

- Business intelligence / activity monitoring
- To generate customised statistics of reports

Electronic medical record

- Obtaining a solution of images and reports to be integrated with the goal of Electronic Medical Record (EMR)

Information technology is transforming healthcare delivery and innovating healthcare information systems, Electronic Patient Records, computerised decision support tools, accidents and emergency systems, telemedicine and several e-health applications and are delivering impressive payoffs in improving the quality of services, optimum utilisation of hospital resources and enhancing clinical outcomes.

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Biotechnology Getting Popular

Biotechnology is helping the healthcare sector to find solutions to problems for which there were highly complexed or no solutions in the past

Before the 1970s, the term, biotechnology, was primarily used in the food processing and agriculture industries. Since then it began to be used by the Western scientific establishments to refer to laboratory-based techniques being developed in biological research, such as recombinant DNA or tissue culture-based processes. In fact, the term should be used in a much broader sense to describe the whole range of methods, both ancient and modern, used to manipulate organic to reach the demands of human.

There has been a great deal of talk and money poured into biotechnology with the hope that miracle drugs will appear. While there do seem to be a small number of efficacious drugs, in general the biotech revolution has not happened in the pharmaceutical sector. However, recent progress with monoclonal antibody based drugs, such as Genentech's Avastin suggest that biotech may finally have found a role in pharmaceutical sales.

Red biotechnology is applied to medical processes. Some examples are the

designing of organisms to produce antibiotics, and the engineering of genetic cures through genomic manipulation.

In medicine, modern biotechnology finds promising applications in the following areas:

- Pharmacogenomics
- Drug production
- Genetic testing
- Gene therapy

Pharmacogenomics

Pharmacogenomics is the study of

how the genetic inheritance of an individual affects his/her body's response to drugs. The vision of pharmacogenomics is to be able to design and produce drugs that are adapted to each person's genetic makeup. Pharmacogenomics results in the following benefits:

- Development of tailor-made medicines. Using pharmacogenomics, pharmaceutical companies can create drugs based on the proteins, enzymes and RNA molecules that are associated with specific genes and diseases.
- More accurate methods of determining appropriate drug dosages. Knowing a patient's genetics will enable doctors to determine how well his/her body can process and metabolize a medicine.

- Improvements in the drug discovery and approval process. The discovery of potential therapies will be made easier using genome targets. Genes have been associated with numerous diseases and disorders.

- Better vaccines. Safer vaccines can be designed and produced by organisms transformed by means of genetic engineering. These vaccines will elicit the immune response without the attendant risks of infection. They will be inexpensive, stable, easy to store, and capable of being engineered to carry several strains of pathogen at once.

Pharmaceutical products

Biopharmaceuticals are large biological molecules known as proteins and these target the underlying mechanisms and pathways of a malady; it is a relatively

young industry. They can deal with targets in humans that are not accessible with traditional medicines.

Modern biotechnology is often associated with the use of genetically altered microorganisms for the production of substances like insulin or antibiotics. Biotechnology is also commonly associated with landmark breakthroughs in new medical therapies to treat diabetes, hepatitis B, hepatitis C, cancers, arthritis, haemophilia, bone fractures, multiple sclerosis, cardiovascular as well as molecular diagnostic devices than can be used to define the patient population.

Genetic testing

Genetic testing involves the direct examination of the DNA molecule itself. Genetic testing can be used to diagnose a disease; confirm a diagnosis;

provide prognostic information about the course of a disease; confirm the existence of a disease in individuals and; with varying degrees of accuracy, predict the risk of future disease in healthy individuals or their progeny.

Gene therapy

Gene therapy may be used for treating, or even curing, genetic and acquired diseases like cancer and AIDS by using normal genes to supplement or replace defective genes or to bolster a normal function such as immunity. It can be used to target somatic (i.e., body) or germ (i.e., egg and sperm) cells. In somatic gene therapy, the genome of the recipient is changed, but this change is not passed along to the next generation. In contrast, in germline gene therapy, the egg and sperm cells of the parents are changed for the purpose of passing on the changes to their offspring. Currently, the use of gene therapy is limited. Somatic gene therapy is primarily at the experimental stage.



There has been a great deal of talk and money poured into biotechnology with the hope that miracle drugs will appear. While there do seem to be a small number of efficacious drugs, in general the biotech revolution has not happened in the pharmaceutical sector



By Gajesh Dhariwal
Manager, Advanced Medical Instruments Co LLC (AMICO)

Home healthcare – A healthy trend

The concept of home healthcare has been prevalent in the West for quite sometime and has now started picking up in the Middle East as well. Home healthcare helps medically dependent and seniors live independently for as long as possible, given the limits of their medical condition. It covers a wide range of services and can often avoid and or delay the need for long-term nursing home care. Many conditions and diseases can be managed successfully at home, giving the patient a chance to maintain as normal and productive life as possible.

More specifically, home healthcare may include use of support devices, occupational and physical therapy, speech therapy, and even skilled nursing. It may involve helping the elderly with activities of daily living such as bathing, dressing, and eating. People who needed long term healthcare use to remain in the hospitals and nursing home for extended period of time, thus costing more and forcing people to stay away from the healthier home atmosphere. But with the availability of numerous user-friendly and affordable home healthcare devices now the patients can move in to more comfortable home environment.

There is an extensive range of available home healthcare devices such as oxygen therapy products, sleeping and breathing assisting devices, aids for mobility, low vision and daily living. Revolutionary technological advancements have drastically reduced the size

and weight of the commonly-used devices, made their operation very simple and their appearance very trendy. The portable oxygen concentrators weigh as less as 2.5 kg, a CPAP (Continuous Positive Air Way Pressure) unit 1.3 kg, an Ultrasonic Nebuliser 125 gm and a Pulse Oximeter just 50 gm. Owing to excellent healthcare services in Oman, we have all the required specialty services available to the residents of Oman. This is further complemented by availability of the high-quality and reliable medical devices required for home healthcare through the medical companies.

Equipments like Portable Oxygen Concentrators, Ventilators for home use, very handy Pulse Oximeters, CPAP Units, Nebulisers, Suctions units, powered wheel chairs and daily living aids are easily available from the major medical equipment supplier companies based in Oman. A bit of more awareness among the people and general practitioners can make significant difference in the lives of people who are dependant on medical support in their day-to-day life. Indirectly it will also help reduce the hospital occupancy and national expenses.



Quality products for a healthy life



A report on the pharmaceutical manufacturers and sellers in Oman

Oman's healthcare sector relies primarily on imports for the medicines and other related products as there are very few pharmaceutical manufacturing companies in the Sultanate. Despite the market constraints, the manufacturers are taking active steps to grow the industry by broadbase their product portfolio and join ands with international majors.

Oman Pharmaceutical Products Co. LLC (OPP) is a global pharmaceutical company specialising in the development, production and marketing of generic and OTC pharmaceuticals in the GCC and worldwide. The ultra-modern plant of OPP is located in Salalah, South of Oman. The manufacturing plants are regularly inspected by health authorities of GCC and other advanced countries. OPP/Zynova is the only pharmaceutical organisation in GCC to have achieved

this rare distinction of crossing regulatory approvals of some international authorities like MHRA –UK, TGA-Australia, RVO-Germany and GCC-DR.

National Pharmaceutical Industries Co. is the first finished formationsl manufacturer from the Sultanate of Oman. NPI has a hi-tech manufacturing place set up as per cGMP norms and UK MCA and US FDA requirements. The project is jointly promoted by the Ministry of Health, Government of Oman and the public and private sector. The project began its commercial operations in May 2001 and within a record time, has gone on to manufacture and register a wide range of products. NPI now is a public limited company listed in the Muscat Stock Exchange.

One striking feature of Oman is the availability of pharma stores where one goes. The credit goes to the vast pool of

private players that have opened their outlets across Oman. In 2005, there were 331 private pharmacies. Almost half were in Muscat region.

Mazoon Pharmacy LLC was the first pharmacy store in Oman. As a major supplier of medicines to government institutions and pharmacies across the Sultanate, Mazoon Pharmacy has established itself as a prominent distributor of pharmaceutical and healthcare products. Ibn Sina Pharmacy LLC is an organisation that has reached out to touch the life of millions in the Sultanate of Oman for the past 33 years. As recognition of rendering quality services, the company was awarded ISO 9001–2000 certification in October 2003 by Bureau Veritas Quality International, UK. In 2006, Ibn Sina was accredited with ISO recertification. The company also owns and operates its own retail pharmacy outlets in 12 locations across the country.

IBN SINA PHARMACY LLC

COMMITTED TO EXCELLENCE

Ibn Sina Pharmacy LLC is an organisation that has reached out to touch the life of millions in the Sultanate of Oman for the past 33 years.

Established in 1974, Ibn Sina Pharmacy LLC has successfully managed to emerge as a force to reckon with in the healthcare sector in Oman. Growing far ahead of the market trends, the company's objective is to cross the milestone of USD 25 million turnover by 2009. The company's success can be attributed to following two basic policies, viz, a total commitment to provide quality service to ensure customer satisfaction: professional conduct and ethics in all aspects of business transaction.

The vision of Ibn Sina Pharmacy LLC is to be the most preferred supplier in healthcare business. This is being accomplished by providing quality products and services by a team of professionals. Ibn Sina remains pledged to provide the best service to customers and principals while facilitating a healthy work climate for its personnel.



As recognition of rendering quality services, the company was awarded ISO 9001-2000 certification in October 2003 by Bureau Veritas Quality International, UK. In 2006, Ibn Sina was accredited with ISO recertification.

Ibn Sina Pharmacy's core business includes import, distribution of pharmaceutical & FMCG products, hospital equipment, diagnostics & surgical goods. It represents leading global and GCC manufacturers in the region. The customer profile includes all health institutions under the Ministry of Health, corporate clinics, hospitals and polyclinics, hypermarkets, pharmacies and retail stores. In the B2C segment, Ibn Sina directly services the health needs of the population through its own chain of 12 retail pharmacies in Muscat, Sohar, Sur and Salalah. Moving deeper, taking healthcare into the micro-interiors. Ibn Sina has opened two new branches in Haima and Adam recently.

The latest innovation from Ibn Sina is their 'Good Health' package for corporates, designed to promote health awareness and monitoring of both blood pressure and blood sugar levels conveniently at home. With the changing times, the concept of corporate gifts



ISO re-certification: Dilip Mehta, Director, Ibn Sina Pharmacy LLC, receiving the ISO 9001:2000 certificate

can perhaps shift now to gifting good health. Both employees and customers will gratefully acknowledge the benefits of the value pack.

A team of experts assist clients to procure, install and commission equipment to suit individual requirement backed by a dependable after sales service.

The company prides itself in being managed by 130 committed professionals. Sales and service of medical equipment by trained biomedical engineers, knowledge updation periodically through refresher courses, management workshops, medical symposia and training at principals' facilities together enhances the conscious efforts to promote excellence.

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Advertorial

MAZOOON PHARMACY LLC

LOYALTY AND UPRIGHTNESS COME FIRST

Mazoon Pharmacy LLC, with its head office at Wadi Kabir and registered in 1973, was the first pharmacy store in Oman.

As a major supplier of medicines to government institutions and pharmacies across the Sultanate, Mazoon Pharmacy has established itself as a prominent distributor of pharmaceutical and healthcare products. Hassan Mohamed Habib, Assistant Director General, Mazoon Pharmacy LLC, speaks on the company's operations and achievements in an interview with OER Dossier

What is the general scenario of the pharma sector in Oman?

The government is the biggest buyer of the pharma products, making for about 65 to 70 per cent of the total pharma sales in Oman. The Ministry of Health is the nodal body providing free medical care to Omani nationals through its hospitals, health centres, etc and is the single largest buyer of pharmaceuticals. The Sultan Qaboos University Hospital, a part of the Ministry of Edu-



Hassan Mohamed Habib

Haj Mohamed Habib

Altaf Mohamed Habib

cation, offering specialised medical facilities is also an important buyer of pharma products. Besides, the Ministry of Defence, Diwan of Royal Court and the Royal Oman Police have their own hospitals to provide medical care to their employees and their families. Accordingly, they are the other important buyers of medicines through their respective annual tenders.

The private sector consumes about 30 to 35 per cent of the pharma products. A large number of general practitioners located throughout the country attend to the needs of expatriate population, and their prescriptions are serviced by private retail pharmacies. Moreover, polyclinics, medical centres, private hospitals attend to company employees, and their prescriptions mostly go to the in-house or nearby pharmacies. Another aspect of the pharma sector in Oman is that there is a trend to use more and more generic products from reliable manufacturers, especially by the Ministry of Health. Further, general practitioners often tend to use cheaper branded generics from Arab and Indian companies

What are the challenges faced by the pharma sector when it comes to the supply and availability of drugs?

The pharma trade is well organised and imports are well planned. Thus, no major problem, whatsoever, is faced with regard to the supply and availability of products. In fact, 98 to 99 per cent of the products prescribed by doctors are easily available in our market.

Give a brief on important brands that you represent.

Products coming out of latest discoveries in the field of cancer and HIV treatment are available and these breakthrough products include Roferon-A, Neupogen, Avastin, Herceptin, Mabthera, Tarceva, Pegasys, Neulastim, etc. In addition, there are other well known brands viz, Rocephin, Roacutane, Valium, Fucidin, Fucithalmic, One-Alpha, Daivonex, Daivobet, etc.

Please give us information on the Over The Counter (OTC) items that you represent.

In OTCs, we deal in Tiger balm ointment, Salonpas plaster and Bigen.

How many retail outlets you have in and outside Muscat?

We have branches in OC Centre, Sook, Wadi Kabir, Walja and Salalah.

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Advertorial

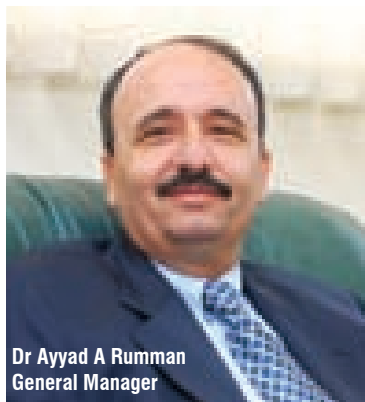
NATIONAL PHARMACEUTICAL INDUSTRIES CO

FIRST IN THE BUSINESS

National Pharmaceutical Industries Co is the first finished formations manufacturer from the Sultanate of Oman. NPI has a hitech manufacturing place set up as per cGMP norms and UK MCA and US FDA requirements.

The project is jointly promoted by the Ministry of Health, Government of Oman and the public and private sector. The project began its commercial operations in May 2001 and within a record time, has gone on to manufacture and register a wide range of products. NPI now is a public limited company listed in the Muscat Stock Exchange.

The company's share capital is RO 7.579 million, with majority shareholding lying with the government and Suhail Bahwan Group. The total investment in the project so far has been RO 12.579 million. The products of NPI are now sold to various governmental, semi-governmental institutions and private players within the Sultanate and other GCC countries. The company



Dr Ayyad A Rumman
General Manager

began with manufacturing seven basic products lines such as antibiotics, anti-inflammatory preparations, pain-killers, antihistamines and oral rehydration salt. Subsequently, NPI has gained expertise and now manufactures various other therapeutics such as antihypertensives, antidiabetics, cough and cold preparations, and other high-value generics. The company currently has 73 registered products under its belt with about 11 more being under registration.

The Company's sales profile earlier was 70 per cent to the Government and rest to the private sector. Now it stands at 50-50 per cent each. Dr Ayyad A Rumman, General Manager, says the company's exports too are robust. "While in 2002, we had a total of seven products registered in export market,

now most of NPI products are registered in 12 different countries with a total of 212 registration. In a year's time, we aim at 65% of our production to be exported and the rest to be sold in the domestic market," he adds.

In order to achieve break-even by next year, the company is banking on a two-pronged strategy: New products and new markets. "Besides the GCC markets, we are also a registered company with the Kimadia in Iraq, Ministry of Health in Libyan Arab Jamahariya, the Supreme Board of Medicine in the Republic of Yemen, Jordan and Burkina Faso. We are exploring options to register our office in Europe, Africa and Latin American markets," say Rumman.

On the new product lines, the GM says, "we are gradually shifting focus to new therapeutic segments such as cardiovascular and dehydrants. We are going to focus more on low in size, highly priced products so that we get higher margins. Besides, our applied research team is in the process of generating new formulations." The company, which has registered more than triple growth in the last three years, aims to achieving a sale of US\$20 million in the coming years.

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OMAN PHARMACEUTICAL PRODUCTS Co. LLC

EXCELLENCE IN MEDICARE

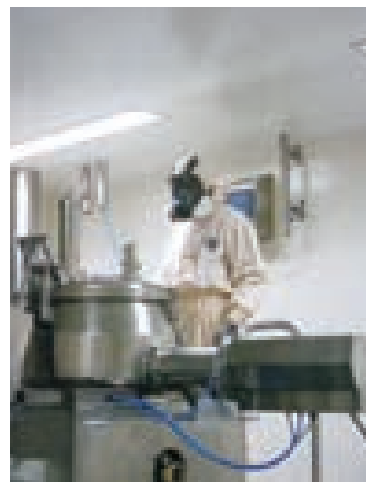
Oman Pharmaceutical Products Co. LLC (OPP) is part of the Al Bahja Group that was established in 1947, and today it is a diversified conglomerate known for its dynamic group companies and leadership status in all its businesses.

OPP is a global pharmaceutical company specialising in the development, production and marketing of generic and OTC pharmaceuticals in the GCC and worldwide. The ultra-modern plant of OPP is located in Salalah, South of Oman. The manufacturing plants are regularly inspected by health authorities of GCC and other advanced countries.

OPP / Zynova is the only pharmaceutical organisation in GCC to have achieved this rare distinction of cross-regulatory approvals of some international authorities like MHRA-UK, TGA-Australia, RVO-Germany and GCC-DR. This world-class facility also offers contract manufacturing services to multinational corporations and large pharmaceutical organisations who would like to outsource products for toll manufacturing.

The portfolio of finished dosage products includes antibiotics and non-antibiotics which are manufactured in dedicated production blocks. This facility has large modules for production of hormone and steroid formulations, the only one of its kind in the GCC. OPP has large manufacturing capacity for tablets, capsules, liquid orals, dry powders and topical preparations. Technical and regulatory supports are available as an integral part of the company's services. OPP is interested in global partnerships for contract manufacturing, in-licensing, co-marketing and joint ventures.

The company is committed to innovation and has developed some of the most innovative prescription medicines for cardiovascular disease, diabetes, infections, dermatology and nutritional products – products that contribute to the health of people and their quality of life. Zynova's facility



and future business is built by people and the company regards its employees as its most valuable resource.

The salient features of the facility are viz. installation of SCADA and PLC for product movement and high degree of automation. HVAC System to meet the requirements of OPP's zone concept policy. The plant is designed in 'U' shape for Uni-linear men and material movement for prevention of mix-ups and cross contamination.

The company encourages its workforce to take an active role in exploring the boundaries of medical and pharmaceutical research, in the hope that generations to come will enjoy a more secure and healthier future.

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Advertisement



By Dr Deepak Sharma
Homeopathic Consultant, Lama Polyclinic

Homoeopathy treatment in Oman

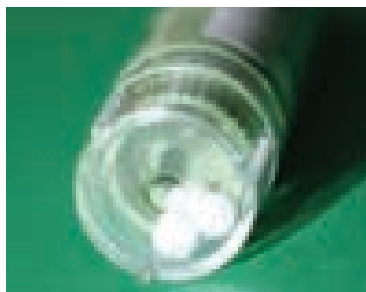
Homoeopathy today is a rapidly growing system and is being practiced almost all over the world and has become a household name due to the safety of its pills and gentleness of its cure.

Oman was the first Gulf country to have given official permission for the practice of homoeopathy in the Middle East, way back in 1995. Now, almost all the neighbouring countries have followed Oman's example. Lama Polyclinic was the first clinic in Muscat to start a homoeopathic polyclinic, way back in 1995 at its CBD branch and under Dr (Mrs) Anupam Sharma at Al-Khuwair branch, and supported by Dr Reckeweg & Co. of Germany, the leading manufacturers of homoeopathic medicines.

Homoeopathy today is a rapidly growing system and is being practised almost all over the world. Today homoeopathy is a household name in Muscat due to the safety of its pills and gentleness of its cure and a lot of patients are being benefited by it.

Origin

The principle of homoeopathy has been known since the time of Hippocrates, the founder of medicine, around 450 BC. More than a thousand years later the Swiss alchemist Paracelsus employed the same system of healing based upon the principle that "like cures like". But it was not until the late 18th century that homoeopathy as it is practiced today was evolved by the great German physician, Dr Samuel Hahnemann. He was



of healing which would be safe, gentle, and effective. He believed that human beings had a capacity for healing themselves and that the symptoms of disease reflected the individual's struggle to overcome his illness. He discovered the principle that what a substance could cause in the way of symptoms, it could also cure.

Concepts & principles

Homoeopathy is the system of treatment based on demonstrable laws and principles, which are:

a) **The Law of Similars:** It is also called the Law of Cure. This law demonstrates that the selected remedy is able to produce a range of symptoms in a healthy person similar to that observed in the patient, thus leading to the principle of Similia Similibus Curentur i.e. let likes be treated by likes. To give a simple example, the effects of peeling an onion are very similar to the symptoms of acute cold. The remedy prepared from the red onion, *Allium cepa*, is used to treat the type of cold in which the symptoms resemble those we get from peeling onion. The principle has been verified by millions of ho-

moeopaths all over the world.

b) **The Law of Single Remedy:** This law directs to choose and administer such a single remedy, which is most similar to the symptom complex of the sick person at a time.

c) **The Law of Minimum Dose:** The similar remedy selected for a sick should be prescribed in minimum dose, so that when administered there is no toxic effects on the body. It just acts as a triggering and catalytic agent to stimulate and strengthen the existing defense mechanism of the body.

Holistic & individualistic approach

This is a key point and unique to homoeopathy. Even though it may sound strange, homoeopathy does not treat disease per se. A homoeopath does not concentrate his therapy on, say arthritis or bronchitis or cancer. In other words he does not limit his treatment to painful joints, inflamed bronchi or a malignant growth. Rather, he treats all aspects mental, emotional and physical of the person who happens to be suffering with arthritis or bronchitis or cancer. Homoeopathy regards each patient as a unique individual, e.g. six persons with hepatitis might get a different homoeopathic remedy, each one aimed at the individual's totality of symptoms rather than at his liver alone. The physician's interest is not only limited to alleviate the patient's present symptoms but also his long-term well-being.

MUSCAT EYE LASER CENTER (MELC)

REVO- LUTIONARY TREATMENT FOR KERA- TOCONUS

Muscat Eye Laser Center (MELC) has recently introduced a revolutionary treatment for patients with eye conditions involving the cornea.

This new treatment modality is called corneal cross-linking with UVA light and Riboflavin, otherwise known as C3-R for the treatment of Keratoconus, a corneal condition prevalent in Oman and the Gulf regions. According to Sameer Al Awam, CEO and MD of MELC, "We are one of the few institutes in the world offering this new treatment. We introduced it late last year, however, since then there has been much confusion and queries as to the nature of the treatment, how is it done and to whom it can be done." Below is an excerpt of an interview with Dr. Dita Sekito-Padua, a distinguished ophthalmologist from the Philippines who has been with MELC for almost two years now and who has been very much in-



Dr. Dita Sekito-Padua (right) with the CEO and MD of MELC, Sameer Al Awam (left) and Medical Director, Dr. Maria Clara Arbelaez (centre)

involved in treating patients with Keratoconus by C3-R led by MELC Medical Director, Dr. Maria Clara Arbelaez.

What is Keratoconus?

Keratoconus is a common bilateral corneal condition which has been observed to occur more frequently in the Gulf areas compared to other parts of the world. It is characterised by progressive corneal thinning and stretching which gradually progresses in both eyes allowing the corneas to bulge forward and adopt an irregular cone shape. As a result, the eye develops astigmatism and the vision may become severely blurred. Replacement of the central cornea by corneal transplantation surgery becomes necessary in a minority of affected individuals when the condition becomes too far advanced.

What is Collagen Cross-linking?

Cross-linking of the cornea is a new curative approach to increase the mechanical and biochemical stability of corneal tissue. The aim of the treatment is to increase the chemical bonds in cornea, thus making it stronger and thicker.

How is the treatment done?

The treatment involves removing the

skin (epithelium) from the surface of the cornea and then applying Riboflavin (Vitamin B2) eye drops. The eye is then exposed to UVA light for 30 minutes. After the treatment, bandage contact lenses are worn for 1 week and antibiotic ointment is applied to the treated eye four times a day until the surface of the eye has healed.

What are the adverse effects of UV Cross-linking?

Studies have shown so far that patients who underwent this treatment never had any collateral effects such as formation of scars, cataract, and damage to the other parts of the eye. Moreover, there is also the risk of delayed re-epithelization, which is related to the biological variability of every individual, therefore it is necessary to comply with the follow-ups and post treatment meds.

What are the advantages of this treatment?

Simple one time treatment; no periodic treatment required; halts the progression of Keratoconus; it is permanent; no injection, stitches, incisions; and quick recovery.

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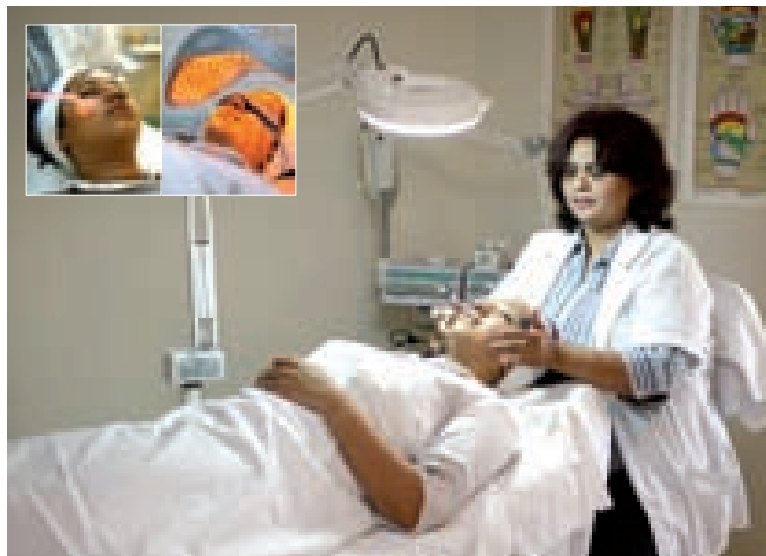
Advertorial

HOLISTIC SKIN AND HAIR CARE

REJUVEN- ATING MIND & BODY

Holistic Skin and Hair Care, situated behind Al Sarooj Plaza in Shatti Qurum, provides all kinds of treatments for face and body under one roof.

In specialised skin care it provides services such as micro-peeling, photo-rejuvenation, non-surgical lifting, facials, aromatherapy, and bridal packages. Under body treatments, the clinic provides facilities such as slimming and total body shaping, trademark holistic hot stone massage, soothing body massages, and Indian head massage. Besides, the centre also provides all kinds of hair treatments with L'Oreal products for dandruff, hair falling, hair cuts, shampooing, conditioning, styling, colouring, manicures and pedicures, nail art and extensions, creative Henna patterns and body art. Holistic Skin and Hair Care's photo rejuvenation helps revive the skin and lifts sagging muscles, especially around the neck and the lower jaw area. Besides using coloured lights, the technique uses two special electrodes, which use



polarised current. This treatment targets common skin problems such as minor acne, redness and uneven pigmentation. Rushda Iqbal, a Canadian expert and the owner of the centre, has long term experience in handling this and associated skin treatments available at her centre.

Non-surgical Lifting

Skin ageing is an inevitable process that begins at above age 25 or sometimes even sooner, depending on heredity and lifestyle. Ageing takes place in all three skin layers – epidermis, dermis and muscles. Non-surgical treatment achieves visible results on all three levels.

Photo Rejuvenation

It's light and colour therapy to turn back the clock on ageing, sun-damaged skin, minor acne, redness and uneven pigmentation.

Micro-dermabrasion

It's a progressive, non-invasive treatment that propels natural mineral crystals onto the surface of the skin for gentle epidermal abrasion that reveals newer, healthier and younger skin.

Facials

European facials: A unique blend of European technique with specialised products.

Teen facial: The relaxing beneficial treatment promotes early habits for greater skin care and hygiene.

Catiovital treatment

A complete deep-cleansing treatment for all skin types with Phyto Aromatic oil beauty breaks with spectacular results. Your complexion gains a new serenity in marvellous aromatic aura.

Revitalising Firming

Anti-wrinkle for all women seeking a youthful result whatever their skin type – dry, sensitive, oily or combination.

Aromatherapy for mind & body

Hot stone massage: It's a connection to the earth and gives a feeling protected. It can unlock tension within muscles, relieve stresses, and help achieve total relaxation. Even we have hot stone facial and pedicure, Swedish massage.

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A vertical



Gautam Dey
GM, Life Care Division & Chief Strategy Officer, IMTAC

Trend-setter in Clinical Technology

Industrial Management Technology & Contracting (IMTAC) LLC, established in 1984, is a leading technology company in the Middle East with its headquarters in Muscat. It provides Technology & IT services across multiple domains, including Healthcare, Financial Services & Telecom. In an interview, Gautam Dey, GM-Life Care Division & Chief Strategy Officer, Imtac, shares valuable insights on the company's core strengths and Imtac's close involvement with care provider organisations, including the Ministry of Health, in Oman.

What sets you apart from other players in the healthcare market? Which major companies you have partnered with to develop and provide cutting edge solutions in the healthcare market?

Imtac's Life Care solutions are focused on providing leading edge technology solutions to healthcare provider organizations. We provide the complete range of medical & information technology solutions, encompassing need assessment, identifying individual components, designing of the overall solution, deployment and services. For example in an Intensive Care Unit, IMTAC would typically supply equipments like Patient Monitors, Ventilators, Syringe Pumps, Dialysis units etc, connect them to the Hospital LAN, integrate with Patient Data Management Systems and finally into the Electronic Medical Record (EMR). There are a plethora of vendors who can supply the individual components, but IMTAC's value proposition lies in being

able to deliver a fully integrated solution embracing devices, networks & IT. This is the reason why IMTAC is the only medical technology services provider, based out of Oman, but with a customer footprint across the GCC.

Our solution portfolio includes leading edge technology from global medical technology leaders such as Philips, Hitachi, Bausch & Lomb, Gambro, Cardinal Health, & Stryker. In terms of IT solutions, IMTAC is a Microsoft Gold Partner, Oracle Certified Partner & an HP Preferred Partner.

What makes Oman's healthcare market different or similar to other markets in the Middle East? What are the challenges that the industry is facing in Oman and how those challenges could be overcome?

Let's see it first from the macro perspective. The demographic profile of Oman, like Saudi Arabia, is such that there are much more nationals than expats in the total population. If you look at the demographic balance of Oman, you'll find that there are 70 percent nationals and 30 percent expats. However, in UAE, the composition is 90 percent expats and 10 percent nationals. Further, Oman is a geographically spread country, unlike UAE, Qatar, Bahrain or Kuwait. As such, the Government in Oman has to invest heavily in primary care across a geographically spread arena, and back it up with regional referral centers and finally tertiary care super specialty centers. Also, with nationals being the primary consumers of

Healthcare services, the responsibility of providing quality care lies squarely with the Government.

Unlike Oman for example, UAE with a much smaller population of national and relatively much smaller geographical size has the advantage to focus more on the entire emirate by building fewer tertiary care & primary care centers and catering to the entire emirate. But you can't do it in Oman and here investment is likely to be higher and the economies of scale don't come into play. In spite of such constraints, Oman has consistently performed better than other GCC countries in terms of Healthcare services delivery against WHO benchmarks, which is a great testimony of the excellent work done by the Government in Oman in providing quality healthcare to citizens and residents.

From the micro perspective, the Oman government's focus is on optimum utilization of limited budgetary resources, whereas the UAE government can take care of a smaller national population within the same budget. Also the private sector and insurance play a huge role in the UAE Healthcare sector, due to the relatively larger expatriate population.

What are the challenges the healthcare industry is facing in Oman and in what ways these challenges be overcome?

Oman's GDP is much lower than other GCC countries like UAE, and as such Healthcare spending is naturally lower in absolute terms, while the consumers as in nationals are much higher. This

gives rise to tremendous challenges in terms of optimizing resources yet providing quality care. The Government has therefore attempted to achieve a balancing act by smart investments and leveraging technology. For example, Oman is investing heavily in digital connected solutions like PACS and Telemedicine, to reduce operating costs while still retaining the ability to cater for a geographically spread population base. Also, Oman is the only GCC country to have implemented in-house developed Electronic Medical Record (EMR) system in all hospitals & Health Centers of the MOH, which gives them the ability to monitor the care delivery process and optimize effectively without impacting the quality of care.

Can you tell us about the growth of healthcare informatics in Oman? What kind of changes, in your opinion, that will take place in healthcare informatics in Oman in coming years? What role IMTAC is expected to play in the transformation?

As I mentioned earlier, Oman is the only country in GCC that implemented healthcare informatics, across the government facilities. This initiative started 10 years ago, with the MOH building its own Hospital Information system – Al Shifa. This system now runs in all hospitals and polyclinics of the MOH, whereas in UAE the tender for health information systems has been floated only recently! In this sense, Oman is the regional leader in healthcare informatics. In the coming years, we'll see e-services coming in a big way in healthcare, as part of the DIGITAL Oman roadmap. E-services not only reduce the cost of deployment but also extend the geographical reach of healthcare services. It also plays a critical role in improving the quality of care.

Imtac works closely with the MOH in terms of realizing the vision of an integrated health network (IHN) and e-



services. We are unique in so far as we have in-house capability in building systems, and these can easily integrate with existing systems like Al Shifa. We've deployed cutting edge medical informatics technology and systems across most of the major hospitals like Royal Hospital, Khoula Hospital etc. and integrated with existing systems to provide workflow optimization & process improvements, leading to better care at reduced operating costs. We undertake software development contracts for healthcare providers. We also consult, design, deploy and support integrated medical technology & informatics solutions.

How critical is managed services for a healthcare institution? Can you give some brief examples where IMTAC made a major difference in the operations of a health institution with its healthcare managed services?

The government here has been at the forefront in terms of understanding the importance of managed services in the healthcare domain. The MoH's first managed service contract was the outsourcing of operations and maintenance of Royal Hospital a decade ago, and its contract was with Imtac for 6 years. Since then we've managed various services like all equipments in the ministry relating to critical care. We've some of the largest managed services

contract with the ministry, simply because of our ability to provide service levels benchmarked against international norms, while still retaining cost effectiveness.

What kind of continuous medical education services does IMTAC provide in the healthcare market? How you have developed such solutions?

Continuous Medical Education is vital to maintaining the quality of care and keeping in touch with all current advancements in the clinical domain. IMTAC has a strategic focus on this, and over a decade ago started by providing training and certification to ECG technicians. Today, we actively promote the usage of simulation technology in medical education. This allows young Omani clinicians, nursing and paramedical staff to get familiarized with various clinical scenarios and hone their skills on simulators, before they actually work with patients. This has the benefit of enhancing the quality of care, yet reducing the risks. Our consultants often do seminars, interactive workshops etc. aimed at bridging the gap between classroom teaching and real life medical practice. I am proud to say that we are among the very few companies who employ doctors, nurses, pharmacists and other clinical professionals to support users in terms of clinical application of technology.



By Dr. Rajiv Khandekar

Advisor & In-charge of eye and ear healthcare, Department for control of Non-Communicable Diseases, Directorate of Health Affairs, Ministry of Health, Sultanate of Oman

For your eyes only

Eyes are important sense organs that connect the human being to its surrounding and to the other fellow beings. Its proper functioning is important for children to have overall development, for adults to earn their daily livelihood and to the elderly citizens to impart their wisdom to young generation. This issue was given due importance in last three decades in Oman. Formation of the Prevention of Blindness programme in addition to eye care services in hospitals in 1983 reflects the foresight of decision makers.

World has seen greater health challenges like HIV/AIDS, diabetes, new communicable diseases of pandemic magnitude like bird flu and mad-cow diseases. Still blindness has managed to remain in forefront both in agenda of the care givers as well as the community. The blindness rate in GCC is estimated to be 0.7 percent. A survey conducted in 1996 suggested that Oman had 1.1 percent of blindness and nearly 18,000 blind in the Sultanate. A repeat survey in 2005 targeting >40 years old population suggested that in this age group the blindness rate had declined from 9.8 percent to 6.9 percent. The trends show that the causes of blindness that were avoidable and treatable in the past have declined and diseases linked to aging are on the rise.

In Oman, eye care is continued to be offered in more than 170 Primary Health Centres (PHCs) by physicians trained in

primary eye care. At 30 institutes of the MoH, 110 ophthalmologists offer state-of-the-art eye care to patients. In 10 of these institutions, there are facilities for eye surgeries and hospitalisation. Ophthalmologists also perform eye surgeries in Sultan Qaboos University hospital, Armed Forces Hospital and three private hospitals. Eye patients are treated in nearly 18 private clinics with ophthalmology units. More than 150 qualified opticians assist ophthalmologists both in institutions as well as in private optical shops to cater visual aids (spectacles and contact lenses) to the needy. Thus in Oman with approximately 2.44 million population, resources for eye care are adequate.

In last three to five years, in the health plans of the MoH, due importance is given to the prevention of blindness and eye care. To reach global and national goals, a team effort is recommended. Hence, a 'National eye health care committee' comprising of representatives of different organisations related to eye care meet periodically and decides policy of eye care in Oman. The Sultanate of Oman in the past was having high rates of blindness due to infectious and avoidable eye diseases. Trachoma is a leading cause of blindness in many developing countries even today and it was rampant in Oman in the past. 70 percent to 80 percent of children in the early 70s suffered from infective stage of trachoma. The improvements of socioeconomic status, health initiatives and improved education have reduced

this problem and it is less than 1 percent in 2006! Oman will soon get WHO certificate for elimination of blindness due to trachoma.

Cataract is the leading cause of blindness worldwide. A simple operation restores the eyesight within minutes. Ophthalmologists perform state-of-the-art procedures like lens implantation and Phako emulsification in Oman. Active screening campaigns to detect cataract cases in villages are also undertaken for fifteen days every year. In addition to focusing on increasing number of cataract surgeries, quality and costs are evaluated. Satisfaction of patients undergoing surgery for cataract was also studied and found to be of excellent grade.

Diabetes is found in around 10 percent of Omani population of more than 20 years of age. As many as 75 percent of people with diabetes after 15 years develop diabetic retinopathy – a complication of diabetes that if not treated on time would make them visually disabled. Digital documentation of diabetic retinopathy and laser treatment are available in seven institutes and it will be available soon in other regions. A survey in 2006 suggested that 4.75 percent of >30 years old Omani population suffer from glaucoma and thus is a public health problem. Regular check up of eye after 40 years of age and detailed investigations to rule out glaucoma in high risk groups (family members of a person with glaucoma,

those suffering from diabetes) are recommended.

Childhood blindness was noted in 7 per 10,000 population in 1996 in Oman. Although it looks rare in Oman, it is important as 45 percent of population in Oman is children <15 years. As visually disabled cause health burden for rest of their life, it is essential that all children with visual impairment are detected and treated at the earliest. Oman is a model in the Middle Eastern countries for adopting low vision care programme for children. Although infective conjunctivitis and allergies in eye do not cause blindness, they are responsible for most of the visits at eye departments. Preventive measures can avoid these conditions and family doctors can treat these cases.

In recent years, use of contact lens both as substitute of spectacles and for cosmetic purpose has become very popular especially in younger generation. Carelessness in its use and hygiene could cause catastrophes and severe visual loss. Hence MoH recently took steps to further improve eye care of contact lens wearers. Minimum standards for contact lens outlets are established. Ophthalmologists notify any adverse event due to contact lens and public health action is taken to investigate the matter. A legal contract between providers and contact lens users is now introduced to ensure proper counselling.

To make eye care sustainable, local manpower is to be trained and utilised. At present, 25 Omani ophthalmologists trained in different countries offer their services. Postgraduate residency programme include specialty of ophthalmology also. The national committee is planning to train mid-level eye care personnel like refractionists, ophthalmic nurses, ophthalmic assistants, counsellors in eye care and low vision therapists.



Newer modalities; both for diagnosis and treating eye diseases are available in all regions. Applications of laser and digital technology have created new avenues to treat eye patients. However such equipment need periodic up gradation and close monitoring of their efficiency.

Clinicians although contribute in the prevention of blindness, they do not find time for implementing public health related issues. Hence, WHO recommends establishing a unit of prevention of blindness within health ministries of member countries. In Oman, it is called eye health care, which is within the Department of Non-Communicable Disease Control. The staffs liaise with primary, secondary and tertiary eye care services, sister organisations, private sector and other health programmes. They also supervise activities of 11 health regions of Oman and assist the chairman of National Eye Health Care Committee in formulating national policies and monitor-

ing their implementation. In last five years, much progress has taken place in Oman both for low vision disabled and blind. Local NGOs and Ministry of Social Affairs assisted the national committee in this endeavour.

People should also adopt safe practices for keeping eyes healthy. Mass media have crucial role to play in improving eye care of a country. Propagation of eye care related messages to the community in their drawing rooms are now possible through TV and radio. The WHO considers Oman as a model for many health programme implementations. Oman is ranked among the first ten member countries for efficient utilisation of health services because of many reasons. Eye care is perhaps one of them. Constant effort to excel working as a team is the mantra by which Oman has succeeded in improving quality of people's lives. Challenges are many but we will meet them with team efforts and surely reach the goal of eliminating avoidable blindness by 2020.

Diabetes can be life threatening

By **Vinod Pallikandy**, Head – Business Development (Pharma), Ibn Sina Pharmacy LLC

Beware ladies and gentlemen. The most dreaded ‘silent killer’ of our era is here. Diabetes is indeed a challenge to our wellbeing and a threat to the next generation as well.

Prevalence in Oman

According to latest estimates from World Health Organisation (WHO), at least 171 million people suffer from diabetes worldwide. Presently, nearly 20 percent Omanis are reported to be affected by diabetes. By the end of 2006, there were 50,000 diabetes patients registered with the Ministry of Health, Sultanate of Oman. The main reason is unhealthy lifestyle, irregular eating habits and lack of exercise. Most diabetics are in the age group 30-60 years and 60 percent of diabetics are females and 40 percent males. Six percent of Omani women have diabetes during pregnancy. However this usually disappears within six weeks after delivery.

Recent study on diabetes in Oman

This study included 7179 individuals aged 20 years or above who participated in a cross-sectional interviewer-administered survey in Oman. The prevalence of diabetes (fasting blood glucose ≥ 7 mmol/l) in the capital region of Muscat was 17.7 percent compared to 10.5 percent in rural areas. A high prevalence of diabetes, obesity, hypertension and high cholesterol exist in the Omani population, particularly among urban-dwellers and older individuals. It is vital to continue monitoring chronic disease in Oman and to direct public health policy towards preventing an epidemic.

What is diabetes mellitus?

Diabetes is of two types



1) Insulin-dependent diabetes (type 1 diabetes)

A severe, chronic form of diabetes caused by insufficient production of insulin and resulting in abnormal metabolism of carbohydrates, fats, and proteins. The disease, which typically appears in childhood or adolescence, is characterised by increased sugar levels in the blood and urine, excessive thirst, frequent urination and acidosis.

2) Non-insulin-dependent diabetes (type 2 diabetes)

A mild form of diabetes that typically appears first in adulthood and is exacerbated by obesity and an inactive lifestyle. This disease often has no symptoms, is usually diagnosed by tests that indicate glucose intolerance, and is treated with changes in diet and an exercise regimen. Complications from diabetes can be life threatening. Diabetes can affect the blood vessels in the brain, heart and feet. Blockage of blood supply to the feet will lead to lack of sensation, foot ulcers and severe infection will result in amputation of the diabetic foot. Many of the diabetes patients suffer from dysfunction of the kidney and liver. The disease

can affect the eyes and nervous system as well. Diabetes patients should have their blood sugar levels monitored regularly and keep their diet under control.

Latest in diabetes management

Diabetes management has a new dimension now with the introduction of the latest generation blood glucose monitoring system ‘Freestyle Freedom’ by Abbott Diabetes Care, USA. Salient features of freestyle freedom advantages.

- Freestyle freedom helps checking blood sugar at home.
- It is extremely light and compact to carry along during travel.
- Gentle testing with the world’s smallest blood sample size makes it so user-friendly.
- Clear large displays and programmable reminders are the other benefits of this monitor.
- Fast testing is guaranteed with result displayed in just 5 seconds.
- Freestyle freedom has a 250 result downloadable memory with date and time.
- Advantage of alternate sites testing will benefit frequent users.