

Editorial-Educational**King Hamad University Hospital Research Center in Progress**

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King Hamad University Hospital (KHUH) management has adopted a policy of promoting clinical research: its importance, the unprecedented opportunities to discover new local diseases and to change the practice of medicine in Bahrain.

The research office at KHUH supports medical research; the aim of which is to improve health. Medical research includes laboratory research and several kinds of clinical research.

Bahrain Medical Bulletin which is based in KHUH has published thousands of clinical research studies since 1979; the studies include trials of preventive and therapeutic designs, epidemiology and behavioral research¹.

Bahrain Medical Bulletin has designed, encouraged and initiated research publications on antibiotics, vaccines, hormone replacements and steroid therapy, effective drug therapies for psychotic illnesses, testing for genetic disorders, transplanted organs and artificial joints transplantation¹.

Let us remember that risk factors for cardiovascular disease (hypertension, obesity, lack of exercise, smoking, and high blood cholesterol) were identified through research. Osteoporosis and diabetes outlook were changed through research. The killer AIDS treatment has been modified through research.

The practice of medicine over the past fifty years has been transformed, but greater change would be anticipated in the next 50 years because of genetic technology, molecular and cell biology. New tools will reveal the secrets of disease susceptibility, disease development mechanism and unprecedented information about the origin and migration of human populations.

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In the future, we will be able to identify the genetic difference between normal cell and cancer cell, which will lead to the development of highly specific, sensitive molecular markers for cancer detection and therapy. Therefore, we will be able to discover cancer at an early stage, its tendency to metastasize and its sensitivity to therapy. Virtual colonoscopy and other non-invasive cancer screening techniques have been developed through research studies; these procedures might eliminate the need for invasive measures.

Imaging research studies would change our outlook to congestive heart failure and cancer. Imaging research studies might reveal the progression pathway from presymptomatic to overt disease and it might reveal gender and racial differences in disease progression.

New imaging devices are being developed through research to evaluate brain diseases, including the neurodegenerative disorders of aging, multiple sclerosis, psychiatric illnesses, drug abuse and trauma.

Bioengineering offers new health improvements in the future e.g. new drug delivery system, including DNA-based vaccine cancer chemotherapy, hormones and gene therapy; the development of these depends on clinical research.

In Bahrain, we have difficulty to recruit or train clinical researchers, especially physician-scientists from Bahrain or other Middle Eastern countries, very few Bahrainis displayed an interest in research because of poor financial return compared to private practice. There is only one training national program which incorporates formal workshop about protocol design, method, statistics, medical ethics, publication and regulatory issues; the program is run solely by Bahrain Medical Bulletin in King Hamad University Hospital.

Clinical research has also been made more difficult by the lack of government and public funds and also the lack of participation of pharmaceutical industry. Research grants are poorly subsidized in the academic setting. In many academic institutions in Bahrain, substantial evidence revealed that the clinical research infrastructure is non-existent.

We need to identify and train clinical researchers in every medical institution in Bahrain and we need to evaluate the funds and grants for clinical research which could change our outlook to medicine in Bahrain. We need to translate basic research into clinical practice and vice versa.

Primary clinical research is what we need to train our clinical researcher rather the secondary research and we need to teach it to medical students as part of college curriculum.

At KHUH, we are hoping to create a virtual clinical research center, where we would be linked to major academic centers throughout the country, to King Faisal Research Center and Harvard Research Center. We could have many hundreds of active clinical research protocols sponsored by various agencies.

We should concentrate our primary research in fields most needed in Bahrain, such as, sickle cell, diabetes, hypertension, cardiovascular disease, genetics and stem cell disease.

In Bahrain, we need to train clinical researchers to perform first-class clinical research. King Hamad University Hospital and Bahrain Medical Bulletin is committed to strengthen research training and career development.

KHUH training program should be expanded and focus on young clinicians. We should attract clinicians into a patient-oriented research. We are hoping to create clinical research training for 1-2 years for physicians. Candidates for this training could be drawn from various disciplines. The training should emphasize research design, data management and analysis, ethical issues and public consideration. Research grant should be easy to get.

We hope to create a network of 10 General Clinical Research Centers in the Government hospitals, BDF hospital and in primary health care; all these centers linked to KHUH Research Center, these centers will provide the infrastructure for the support of inpatient and outpatient research.

We need to establish a national Board for research consisting of colleges, medical school and major hospitals in Bahrain.

It is well known that high quality health care and research go hand-in-hand. Organizations, which conduct research are usually providing best health care standard. This is the reason why many well-to-do patients in the Gulf Cooperation Council Countries travel to the West for treatment, simply their methods of health care delivery are constantly modified through research.

The relationship between research and pharmaceutical industry is important but it has not developed due to rarity of research conducted in Bahrain and due to the hesitancy of the latter to support research in conducting clinical trials and the discovery of new therapeutic agents. KHUH will soon have the research center built and will start its initiative for future cooperation between the pharmaceutical industry and the academia for conducting clinical trials.

KHUH soon would start public campaign to educate the public about the crucial importance of clinical research for the future health development and for improving the health service delivery. Public and government should be kept aware of the health and economic benefits of research and its reflection on medical practice.

In October 2012 at KHUH, we were privileged by the visit of Dr. Sultan Al-Sedairy who is an international figure in science; he is currently the Research Center Executive Director at the King Faisal Specialist Hospital and Research Center, Saudi Arabia.

Dr. Sultan Al-Sedairy is a vocal supporter of scientific research, constantly encouraging the scientific community to get more involved in research activities. Dr. Sultan Al-Sedairy offered us a valuable advice for the future research center and offered to establish a link with King Faisal Specialist Hospital and Research Center.

The design of the KHUH research center has been approved by H.E. Lt. Gen. (Dr) Mohamed Al Khalifa and the construction would start in September 2013 and it would be completed in December 2016. KHUH's vision of the future research center would include:

Data analysis laboratory, diabetic and obesity unit, pediatric research unit, stem cell research unit, immunology and allergy laboratory, cancer research unit, molecular unit, neuroscience and aging unit, infectious and inflammatory diseases unit, assisted reproduction technology unit, bone marrow transplant laboratory and ophthalmology research unit.

The staffing of the research center would be as follows:

- A. Scientist Researchers: These researchers have PhDs, MDs or both and devote at least 50 percent of their time to research. All scientists are also professors in RCSI or AGU and many are active physicians in KHUH or SMC.
- B. Associate Researchers: These are generally physicians, nurses, or other health professionals who devote between 25 and 50 percent of their time to clinical research.
- C. Clinical Researchers: These are generally physicians, nurses, or other health professionals who devote between 5 and 25 percent of their time to clinical research.
- D. Affiliate Researchers: These are researchers who have primary affiliations with other institutions, but maintain significant collaborations with KHUH or have some research funding administered by KHUH.
- E. Trainee Clinical Researchers: These are researchers recruited from various clinical disciplines and trained in research methodology for 3-4 weeks.

Clinical research in Bahrain would be translated into improved diagnosis, treatment and prevention of disease. We aspire to provide Bahraini people with biological discoveries in clinical settings, which might attain our goal of "Improved Health Delivery".

NB. For any comment or suggestion, please send to jaffar.albareeq@khu.org.bh

REFERENCES

1. <http://www.bahrainmedicalbulletin.com/>. Accessed on 13.2.2013.