The Establishment of an ISO Compliant Cancer Biobank for Jordan and its Neighbouring Countries Through Knowledge Transfer & Training

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Abstract

In November 2011, the King Hussein Cancer Center (KHCC) launched the launch of KHCC Biological Resource Center (KHCC-BRC), a project for establishing the first cancer biobank in Jordan, supported partially by the European Union. The aim of this project is to promote the global trend in conducting research on cancer and finding effective treatments by implementing the personalized medicine approach to each individual. KHCC-BRC is the first of its kind in Jordan and the region. KHCC-BRC has been established in order to develop the protocol for establishing an ISO compliant cancer biobank, which will be the first of its kind in the region. KHCC-BRC will become the model for establishing the first regional cancer biobank in the Hashemite Kingdom of Jordan, which will be the first of its kind in the region. KHCC-BRC will become the model for establishing the first regional cancer biobank in the Hashemite Kingdom of Jordan, which will be the first of its kind in the region. KHCC-BRC will become the model for establishing the first regional cancer biobank in the Hashemite Kingdom of Jordan, which will be the first of its kind in the region. KHCC-BRC will become the model for establishing the first regional cancer biobank in the Hashemite Kingdom of Jordan, which will be the first of its kind in the region.

Introduction

In November 2011, the King Hussein Cancer Center (KHCC) launched the launch of KHCC Biological Resource Center (KHCC-BRC), a project for establishing the first cancer biobank in Jordan, supported partially by the European Union. The aim of this project is to promote the global trend in conducting research on cancer and finding effective treatments by implementing the personalized medicine approach to each individual. KHCC-BRC is the first of its kind in Jordan and the region. KHCC-BRC has been established in order to develop the protocol for establishing an ISO compliant cancer biobank, which will be the first of its kind in the region. KHCC-BRC will become the model for establishing the first regional cancer biobank in the Hashemite Kingdom of Jordan, which will be the first of its kind in the region.

KHCC-BRC is a 2-year project that has been divided into a number of workpackages (WP1–WP7).

- WP1: Coordination of support activities and project management.
- WP2: Development of a DSS that complies with international regulations and ISO standards. A Quality Policy Manual will define the KHCC BRC QM.
- WP3: Support the development of Data Security Policies and patient confidentiality and sample traceability. Ethical policies and guidelines will also be developed.
- WP4 & WP5: Develop specific process-related documentation for validation & training plans, specifications, SOPs and forms.
- WP6: Preparation of User Requirements Specifications (URS) and equipment testing protocols for the installation, operation and performance of critical biobanking equipment.
- WP7: Dissemination strategies based on creating awareness of KHCC-BRC in Jordan and its neighboring countries and to provide training to ensure sustainability of this initiative.

Objectives of KHCCBIO

- Develop a research infrastructure for KHCC, increasing its scope and visibility and improving its competitiveness throughout the European and worldwide medical and scientific research area.
- Establish a platform for future knowledge transfer and collaborative research.
- Develop and enhance partnerships between organisations in Europe and the Middle East.
- Disseminate the progress and activities of KHCC-BRC throughout Jordan, its neighboring countries and Europe, increasing worldwide collaborations, thereby ensuring greater impact.

Building capacity so as to facilitate participation of KHCC-BRC in future EU Funding Programmes.

To achieve the above objectives, KHCC-BRC will focus on training and other support activities that are essential in the establishment of a modern, accredited cancer biobank.

These will be achieved through:

- Composing procedures, data privacy standards & policies.
- Tissue procurement, processing & preservation standards.
- Qualification & validation of equipment and systems infrastructure.
- Specimen storage and distribution standards.

The need for harmonisation and standardisation in biobanking is widely recognised. Many national organisations have produced guidelines, but despite these, no relevant international standards exist, and which biobanks can be assessed.

KHCC launches the first cancer biobank (KHCCBIO).

In November 2011, KHCC launched the establishment of a new EU-funded Cancer Biobank in collaboration with its EU partners, Biostudy, Trinity College Dublin & accellation AG.

The need for harmonisation and standardisation in biobanking is widely recognised. Many national organisations have produced guidelines, but despite these, no relevant international standards exist, and which biobanks can be assessed.

Protocol and SOPs established between partners and implemented by KHCCBIO, in addition to the development of an ISO standard QMS.

Training of KHCCBIO staff in the procurement, processing and preservation of patient blood components and tumor issues at the Institute of Molecular Medicine, St James’s Hospital/Trinity College Dublin and Biostudy.

Training of Medical Technologists and a pathologist from KHCCBIO was carried out over a period of six weeks.

Validation & Qualification of biopsicmen collection, processing, testing, preservation, storage and distribution.

One year following the training of KHCCBIO staff in Ireland, a study was undertaken to validate and quality the processes previously established at KHCCBIO.

Sample validation, validation of RNA from normal [n] and tumour [t] tissue before (CPD) and after (RMA) transport in liquid nitrogen (LN2) dry shaper between Ireland and Jordan.

Sample integrity was measured in both institutions using Nanodrop spectrophotometry.

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Dissemination of knowledge to science and society.

At the end of this EU-driven biobanking initiative in 2014, it is envisaged that KHCCBIO will become a world-class, ISO accredited cancer biobank at the King Hussein Cancer Center in Jordan, and have a major impact on cancer science and society in Jordan, in neighboring countries and Europe. Moreover, it will become a core entity for the establishment of a national biobank in the Hashemite Kingdom of Jordan. Dissemination of information relating to KHCCBIO will be achieved through advertising campaigns in the local/Middle Eastern community, and in the wider European and international research communities, by means of information bulletins, public forums, international networking, a website (www.khccb.io) and the participation of future EU FP7-funded Cells. KHCCBIO will ultimately become a unique and rare state-of-the-art biobank repository, contributing to the continued global development of novel personalised therapies for cancer patients.