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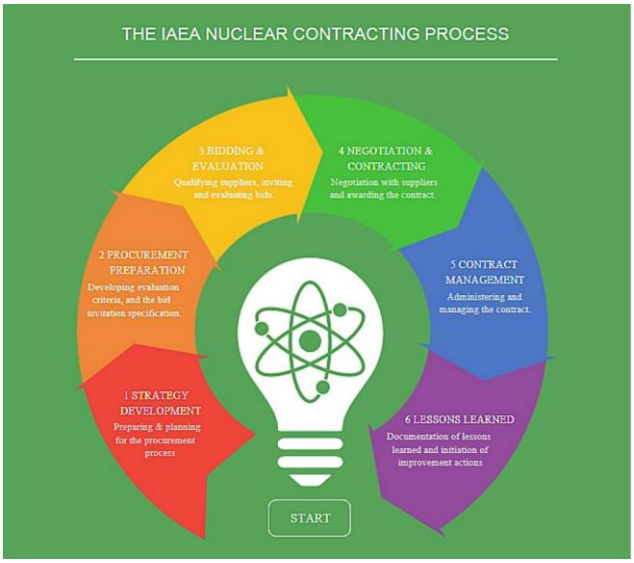
IAEA LAUNCHES NEW NUCLEAR CONTRACTING TOOLKIT
原子能總署發布新的核子合同工具包



The IAEA has recently launched a new Nuclear Contracting Toolkit to help Member States plan and implement procurement and contracting processes for their nuclear projects.

Procurement must be managed effectively to ensure that a facility functions as designed throughout its service life. Ineffective procurement can jeopardize facility safety, reduce performance or result in increased costs. The new toolkit is one of the methods developed to identify and promote best

報告摘要(KEY INFORMATION)

1. 原子能總署最近發布了一個新的“核合同工具包”，用以幫助成員國有效管理其核項目採購和訂約過程，以確保設施在其整個使用壽命期間都能正常運行。
2. 韓國政府及其人民致力於支持”治療癌症行動計劃“，使會員國能夠在聯合國支持下持續發展明確的計畫，以減少癌症的早期死亡率。
3. 孟加拉在過去十年中，衛生官員在原子能總署的支持下建立一個訓練有素的醫務團隊及先進的影像醫學和具有成本效益的基本放射性藥物核醫學，並因經濟可行的方式下使獲得診斷醫療服務的人數增加了三倍。
4. 本月在摩洛哥舉行會議上，與會者鼓勵非洲母親將嬰兒從出生至 6 個月以母乳餵養，提供嬰兒所需的所有營養，以期改善其免疫系統並使用穩定同位素的技術允許衛生官員監測純母乳餵養率，從而確保母乳餵養的成功。
5. 日本和摩納哥透過原子能總署“癌症行動治療計劃”（PACT），幫助蒙古的癌症患者獲得升級的醫療服務。

practices in procurement and contracting.

"The procurement and contracting process for new nuclear power plants is a complex endeavour and is essential for the success of such projects," said Mikhail Chudakov, Deputy Director General and Head of the IAEA's Department of Nuclear Energy. "Efficient, fair and equitable contracts are, thus, key for the safe, secure and sustainable nuclear power generation, and the IAEA is here to help."

The toolkit provides steps on how to develop a procurement strategy, propose and solicit bids and negotiate and manage contracts. It also provides templates and application guides for various types of contracts. It is available for free and without registration via the IAEA's web site.

The toolkit also helps to ensure that purchases are made with a high level of ethics and transparency. However, it is not a substitute for professional advice, whether technical, legal or financial and does not substitute national or international guidelines, procedures or regulations, Chudakov highlighted.

The toolkit replaces an earlier BIDEVAL-3 application that was published in 2000 and was referred in an associated IAEA Nuclear Energy Series publication No. NG-T-3.9 "Invitation and Evaluation of Bids for Nuclear Power Plants" (issued in 2011). It complements the IAEA's "Procurement Engineering and Supply Chain Guidelines in Support of Operation and Maintenance of Nuclear Facilities" (IAEA Nuclear Energy Series No. NP-T-3.21), a new publication which provides an overview of nuclear-related procurement processes and offers guidance on how to set up and manage a high-quality procurement organization. The new publication also includes lessons learned for organizations considering nuclear power plant projects.

To enable constant improvement of the toolkit and to widen the list of useful non-IAEA resources, the IAEA welcomes relevant inputs and suggestions from Member States and interested individuals. Suggestions can be sent to the IAEA's contact point.

The development of the toolkit was supported by Japan under the IAEA Peaceful Uses Initiative.

A DONATION FROM KOREA HELPS TACKLE CANCER IN DEVELOPING COUNTRIES

來自韓國的捐款幫助發展中國家的癌症

In presenting the gift, Mr Jin Gyu Lee, Acting Assistant Minister for R&D Policy, Ministry of Science, ICT & Future Planning, highlighted how cancer has become an important global health and development issue, which presents a major challenge for developing countries. “The Korean government and its people are committed to actively support PACT to enable Member States to achieve tangible results in the United Nations Sustainable Development target to reduce early deaths from cancer”, he said.

Since 2007, KONICOF has collected public donations as part of the country’s “Wings of Hope” campaign to raise awareness of the growing cancer crisis and to support comprehensive cancer control activities in developing countries. The contribution marked the 10th consecutive year that KONICOF has supported PACT. The gift will contribute to the Agency’s work to address cancer in developing countries. In addition, the Government of the Republic of Korea actively supports the IAEA and PACT’s cancer control activities in a number of ways including offering fellowships in the latest cancer treatment methods for oncology experts from around the world at the Korea Institute of Radiological Medical Sciences (KIRAMS).

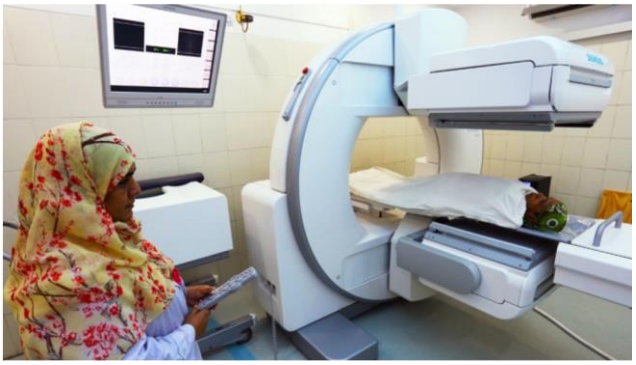
Accepting the contribution, Ms Nelly Enwerem-Bromson, the Director of PACT emphasised the vital role Korea plays as a global leader in health by supporting the capacity of countries to save more lives from cancer. “The wealth of advanced technology emerging from Korea and the sharing of your experience and skills are enabling greater access to cancer services, particularly in countries where there is limited availability of lifesaving care. The gift presented today is an inspiring model of how funding from non-governmental sources complements support from the public sector to further expand much needed cancer control activities in developing countries”, she said.

Programme of Action for Cancer Therapy (PACT)

PACT was established as part of the International Atomic Energy Agency (IAEA) to help fight the growing cancer crisis in the developing world. The IAEA has over 40 years experience in supporting countries in applying nuclear technologies for health and prosperity. PACT works to improve IAEA Member States’ capacities to address the growing cancer burden through promoting the integration of radiotherapy technologies within a comprehensive national cancer control programme. PACT builds strong strategic partnerships, particularly with the World Health Organization, to provide equitable, affordable and quality access to cancer care for all cancer patients to the highest standards, everywhere. cancer.iaea.org

HOW BANGLADESH IS BREAKING DOWN BARRIERS TO NUCLEAR MEDICINE

孟加拉如何打破目前對核醫學的障礙



Dhaka, Bangladesh — The number of people who can affordably access diagnostic medical care in Bangladesh has increased three times over the last ten years, as the country has expanded and strengthened its nuclear medical services. Health officials have worked steadily, with the support of the IAEA, to build a nuclear medicine system with well-trained medical staff, advanced imaging tools and a cost-effective source of essential radiopharmaceuticals.

"I came today because this is a very nice facility, but also because it is the most affordable option," said A. Chowdhury, following a medical scan of her kidneys at the National Institute for Nuclear Medicine and Allied Sciences (NINMAS) in Dhaka one sunny afternoon earlier this month. "Without this kind of public hospital, I don't know how I would have been able to get this help.

NINMAS, recently renovated, is one of the 15 publicly-funded nuclear medicine centres established in the last twenty years around Bangladesh. It carries out more than 60 000 nuclear medicine procedures (see The Science box) each year in the areas of oncology, cardiology, nephrology and cerebral studies. It also provides therapeutic services for thyroid conditions such as cancer, thyrotoxicosis and eye diseases, like pterygium and cancer.

Publicly-funded centres like NINMAS play an important role for Bangladesh's 170 million people, particularly for the quarter of the population who live below the poverty line.

"Cost is extremely important for people in Bangladesh. If we didn't provide subsidized care like we do here at NINMAS, many people would not be able to get the care they need," said Raihan Hussain, Head of the Nuclear Cardiology and positron emission tomography (PET)/computed tomography (CT) Division at NINMAS.

A renal scan, like the one Chowdhury received, is a simple procedure in nuclear medicine that allows doctors to evaluate the condition and function of a patient's kidneys, explained Hussain. "In a private practice this type of procedure costs at least five times as much as at NINMAS."

Since its establishment, NINMAS has worked with IAEA experts to procure equipment, receive training and pursue research to further enhance and refine patient care. Its doctors now also teach medical students.

Future plans for NINMAS include the installation of another PET/CT machine and the establishment of a cyclotron facility for

producing key radiopharmaceuticals — specialized drugs containing small amounts of radioactive material used to create medical scan images. This will allow them to expand patient care and continue to meet growing demands associated with the increasing number of cases of cardiovascular diseases, cancer, tuberculosis and diabetes, among others. These health conditions account for around 75% of nuclear medicine procedures in the country.

"With the new PET/CT machine, we expect to nearly double the number of patients we can service with our machines each week. This is very important because the population continues to grow, which means more people will need care," said Nasreen Sultana, Associate Professor at NINMAS. "The in-house cyclotron will help us to cost-effectively produce radiopharmaceuticals used for PET scans. This will help complement what we are already getting from the research reactor nearby."

IAEA RECOMMENDS NUCLEAR TECHNIQUES TO IMPROVE NUTRITION ASSESSMENTS IN AFRICA

原子能總署建議以核技術改進非洲的營養評估

In Africa, undernutrition is responsible for 45% of child deaths under five years of age. Stunting, the most widespread effect of undernutrition, can be prevented with interventions for good nutrition in early life. Participants at a conference in Morocco this month discussed how to encourage mothers in Africa to exclusively breastfeed their infants from birth to six months of age, providing all the nutrients the babies need and improving their immune systems. A technique using stable isotopes allows health officials to monitor exclusive breastfeeding rates and thereby the success of their breastfeeding promotion campaigns.

"For years the IAEA has been working with Member States in promoting the use of the deuterium oxide dose-to-mother method, a stable isotope technique that allows health workers to collect data on breastfeeding practices in a precise, specific and accurate fashion," said Victor Owino, Nutrition Scientist at the IAEA, and a keynote speaker at a plenary session at the 7th African Nutrition and Epidemiology Conference, entitled 'Nutrition Dynamics in Africa: Opportunities and Challenges for Meeting the Sustainable Development Goals', held from October 9-14 in

Marrakech, Morocco. (See the Box below for more on the technique).

The session 'Use of Stable Isotopes Techniques in Nutrition Assessments and Tracking of Global Targets Post-2015,' which attracted over 300 participants, introduced the comparative advantage of the deuterium oxide dose-to-mother technique in assessing breastfeeding practices over the traditional method of asking mothers to volunteer information on their breastfeeding habits.

"Data from our Member States shows that mothers sometimes overestimate their breastfeeding rates, up to 40% compared to the results obtained from the stable isotope technique," said Owino. "This technique can objectively assess the amount of breast milk consumed and whether the infant is exclusively breastfed, and how this is modified by the introduction of solid foods from six months of age."

Proper nutrition in the first 1000 days from conception to two years of age is key to fighting stunting in children and to reducing the risk of non-communicable diseases later in life. The World Health Organization recommends exclusive breastfeeding for the first six months of life and that breastfeeding be continued to at least two years and beyond. The deuterium dilution technique can shed light on children's body composition and therefore aid the assessment of their quality of growth.

Gad Sam Tukamushaba from Uganda said stable isotope applications were very important for his country. "It is evident that current data has errors which can be avoided with the use of isotope techniques."

In Kenya, the use of stable isotopes is a welcome innovation in the area of infant nutrition, according to Maryanne Wamahiu, a nutrition graduate student at Stockholm University. "This method should continue to be promoted, if not as a primary nutrition assessment approach, then as a means for validating other methods."

Francis B. Zotor, President of the African Nutrition Society, said the IAEA shed light on an important new technique that can help Africa. "The conference outcome sends a strong signal to the world that Africa is ready to move forward with its nutrition agenda – which includes this new technique."

In an effort to share important findings from studies using nuclear techniques, the IAEA will organize a symposium on how stable isotope techniques help optimal formulation and impact assessment of food fortification programmes at the Micronutrient Forum Global Conference to be held in Cancun, Mexico from Oct 23-28.

Deuterium Oxide Dose-to-Mother Technique

A lactating mother drinks a small amount of deuterium oxide (water containing the stable isotope of hydrogen known as deuterium). Within a few hours, the deuterium is distributed throughout her body and is incorporated into her milk. Over a period of 14 days, samples of

saliva are collected from the mother and child, revealing the changes in isotope concentration. This gives researchers insight into the baby's intake of human milk and whether the baby has consumed water from other sources.

After the mother has taken the dose of deuterium oxide, the deuterium gradually disappears from her body and appears in the body of the baby. Deuterium in the baby's body comes only from the milk consumed during breastfeeding. As the deuterium is eliminated from the mother's body, the enrichment in her milk declines and therefore, the enrichment in the baby's body also falls.

A mathematical model is used to determine how much of the deuterium given to the mother appears in the baby's saliva. This is related to the amount of human milk consumed by the baby. The mathematical model also gives an estimate of the amount of water from sources other than the mother's milk, and therefore whether or not the baby is exclusively breastfed. There is no radiation hazard associated with the use of deuterium, which is completely harmless at the levels used to assess infant feeding practices. Deuterium is naturally present in our drinking water and the food we eat, at very low levels.

JAPAN AND MONACO HELP MONGOLIA'S CANCER PATIENTS RECEIVE ACCESS TO UPGRADED SERVICES

日本和摩納哥幫助蒙古的癌症患者接受升級服務

On a visit to Mongolia's National Cancer Centre (NCC) in May 2016, Ayako Kubo, from the Ministry of Foreign Affairs of Japan, discussed the various services the Centre offers, and Japan's collaboration with foreign countries and international organizations including the IAEA.

Dr. Bayar Oyun, NCC's Deputy Director described the state-of-the-art cancer diagnosis and treatment services and training that can now be provided thanks to the support received from the governments of Japan and Monaco, through the IAEA's Programme of Action for Cancer Therapy (PACT).

Japan has allocated 200,000 USD to a PACT project for Mongolia through which the NCC has benefited. "The new radiotherapy planning system supported by Japan will be in place this year as our first Linear accelerator radiotherapy machines become operational," he said. "This will enable us to introduce additional highly

accurate 3D radiation therapy and other modern technologies to Mongolia".

Non-communicable diseases, including cancer, are the main causes of death and illness in Mongolia. Liver and stomach cancers account for over half of all cases and deaths to the disease, and annual figures are expected to double over the next 15 years. Providing adequate care for cancer patients is complicated by a relatively small population living across one of the world's largest countries. In recognising this, Mongolia's efforts to provide access to improved treatment planning at the NCC will enable more patients to get the quality cancer care needed.

Ayako Kubo commended the Centre's work and said, "The NCC has an extremely important role in developing and enhancing the skills of the medical staff in charge of cancer treatment and palliative care all over Mongolia. It was a great pleasure to see with my own eyes how Japan's Peaceful Uses Initiative allocation to PACT contributed to the treatment for cancer patients in Mongolia."

Further assistance from the Principality of Monaco has provided a valuable boost for palliative care services through the training of palliative care doctors and nurses at district and provincial hospitals and the NCC, and the donation installation of additional equipment. The IAEA also supported technology for cancer diagnosis and treatment for radiation protection, x-ray calibration and medical imaging.

In 2010, the IAEA-PACT designated Mongolia as a PACT Model Demonstration Site. These pilot sites aim to demonstrate the effectiveness of evidence-based strategies as well as the benefits drawn from partners combining their efforts to advance comprehensive cancer control services.

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