CURSO REGIONAL DE CAPACITACIÓN EN GANGLIO CENTINELA Y CIRUGÍA RADIOGUIDADA

Santiago - Chile
Octubre 1 a 5 de 2012
IAEA initiatives in nuclear medicine

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Section of Nuclear Medicine and Diagnostic Imaging
Division of Human Health
Outline of the Presentation

• IAEA
• Division of Human Health
• Nuclear Medicine & Diagnostic Imaging Section
• Regional projects in Latin America
  • Who we are
  • What we do
  • How we deliver
• Is an independent intergovernmental, science and technology-based organization, in the UN family, that serves as the global focal point for nuclear cooperation;
• It was set up as the world's "Atoms for Peace" organization in 1957
• The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful use of nuclear technologies.

TO PROMOTE SAFE, SECURE AND PEACEFUL NUCLEAR TECHNOLOGIES.

"Atoms for Peace" was the title of a speech delivered by U.S. President Dwight D. Eisenhower to the UN General Assembly in New York City on December 8, 1953.
"The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world"

Article II of the Statutes of IAEA

Atoms for Health
The following States are Members of the International Atomic Energy Agency:

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UN 193 Member States in 2011

IAEA 154 + 3 Member States

2012

The Agency’s Statute was approved on 23 October 1956 by the Conference on the Statute of the IAEA held at United Nations Headquarters, New York; it entered into force on 29 July 1957. The Headquarters of the Agency are situated in Vienna. Its principal objective is “to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world.”
What exactly does the IAEA do?

**Mission:** Maximizing the contribution of nuclear technology to society, while verifying its peaceful use.

**Three pillars:**

- **Safeguards & verification**
  - Verifies through its inspection system that States comply with their commitments, under the Non-Proliferation Treaty and other non-proliferation agreements, to use nuclear material and facilities only for peaceful purposes.

- **Safety & security**
  - Develops nuclear safety standards and, based on these standards, promotes the achievement and maintenance of high levels of safety in the use of nuclear energy, as well as the protection of human health and the environment against ionizing radiation;

- **Assists**
  - Assists its MS, in the context of social and economic goals, in planning for and using nuclear science and technology for various peaceful purposes, including the generation of electricity, and facilitates the transfer of such technology and knowledge in a sustainable manner to developing MS.
### IAEA Organization Chart

**Director General**
- Secretariat of the Policy-Making Organs
- Office of External Relations and Policy Coordination
- Office of Internal Oversight Services
- Office of Legal Affairs

**Department of Technical Cooperation**
- Africa, and East Asia and the Pacific
- Europe, Latin America and West Asia
- Planning and Coordination

**Department of Nuclear Energy**
- Nuclear Power

**Department of Nuclear Safety & Security**
- Nuclear Installation Safety
- Radiation and Waste Safety

**Department of Management**
- Budget and Finance
- Conference and Document Services

**Department of Nuclear Sciences & Applications**
- Agency’s Laboratories
- Human Health
- IAEA Marine Environment Laboratory, Monaco

**Department of Safeguards**
- Concepts and Planning
- Operations A
- Operations B
- Operations C
- Safeguards Information Technology
- Technical Support
- Physical and Chemical Sciences
- Personnel
- Public Information
- Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture

*Note: (ICTP)*
Objective: to enhance the capabilities in Member States to address needs related to the prevention, diagnosis and treatment of health problems through the application of nuclear techniques:

- NMDI (Nuclear Medicine & Diagnostic Imaging Section)
- ARBR (Applied Radiation Biology & Radiotherapy Section)
- DMRP (Dosimetry & Medical Radiation Physics Section)
- NAHRES (Nutrition & Health related Environmental Studies Section)
Figure 1.8 The shift towards noncommunicable diseases and accidents as causes of death*

Deaths (millions)


* Selected causes.

- Road-traffic accidents
- Cerebrovascular diseases
- Ischaemic heart diseases
- Cancers
- Perinatal causes
- Acute respiratory infections
- Diarrhoeal diseases
- Malaria
- HIV/AIDS
- Tuberculosis
IAEA - Division of Human Health (NAHU)
How we work

Capacity Building of MS
- Education
- Advice
- Awareness
- Human resource development
- Coordinated research (CRP)

Programmatic Activities (Regular Budget)
- Technology transfer

Technical Cooperation
Educational Initiatives of
Nuclear Medicine & Diagnostic Imaging Section

How we deliver

- Consultant Meetings/ Technical Meetings
- Coordinated Research Projects (CRPs)
- International Symposia/Conferences
- Educational Resources
• **Goal:**
  Capacity building in MS to accept, use & update knowledge about modern technology & its quality.

• **To achieve goal:**
  - National training course
  - Regional training course
  - Expert missions
  - Fellowship / Scientific visits
  - Publications
  - Human Health Campus
  - Distance Assisted Training
Major activities in Nuclear Medicine and Diagnostic Imaging

Mission: To enhance capabilities of Member States in Nuclear Medicine & Diagnostic Imaging through enhancing safety and quality of practice

Managing of chronic diseases with integrated diagnostic imaging modalities emphasizing infectious, cardiovascular and cancer

Quality management in professional education and clinical practice

Cost-effective use of radiopharmaceuticals in therapy, neurology and pediatric diseases

IAEA
Awareness

Publications – Web based

http://www.iaea.org/Publications/index.html
Coordinated Research

- Technology transfer (new procedures/techniques implemented)
- Share of knowledge (scientists from developed/developing countries working together)
- Contributes towards the greater understanding or solution of a specific issue or problem
- Contributes to the wider objectives which have been set for the relevant Agency Programme or Project
After 100 years from the discovery of X-rays and half a century from the initial applications of radiotracers, nuclear medicine has become an integral part of medical practice. As the scope of imaging has broadened from anatomy to metabolism and function, and potential applications are increasingly expanding, virtually very few diagnoses can be made without the need of at least the simplest imaging procedure. Through case studies,
Aim is to support physicians in a structured manner.
From Desktop to Mobile Technology

- Expand Learning Opportunities
- Platform for future real time M-Learning
- Lifelong learning experience
Nuclear Cardiology

IAEA HUMAN HEALTH SERIES
No. 18

Nuclear Cardiology: Its Role in Cost Effective Care

IAEA HUMAN HEALTH SERIES
No. 23

Nuclear Cardiology: Guidance and Recommendations for Implementation in Developing Countries
DAT – Distance Assisted Training

- **1990-1994**  Project formulation and funding (AusAID / IAEA / RCA)
- **1994-1997**  Development and pilot testing - Phase 1 *(basic)*
- **1999**  IAEA Inter-regional project established *(Asia, Africa, Latin America)*
- **1999-2002**  Development and pilot testing – Phase 2 *(advanced)*
  - Implementation of training program
- **2003-2004**  Editing and extension of materials (IAEA)
- **2005**  IAEA international review and editing
- **2007-2010**  Development SPECT/CT, PET/CT (DAT Part 2)
  - Phase 3  - Development of website delivery - Pilot
NEW Educational Initiatives of Nuclear Medicine & Diagnostic Imaging Section

- Webinar
  - Web base seminar
  - In comfort of your hospital or home
  - No need to travel
  - Structure interactive training
  - No cost to participant
  - Through a partnership of IAEA and SNM
COMPLIMENTARY WEBINAR:
10 CT Cases of the Thorax, Abdomen, and Pelvis

August 21, 2012 | 9:00pm PDT*

IAEA and SNMMI bring you a free webinar designed to increase Nuclear Medicine physicians’ knowledge of cross sectional anatomy. Sundeep Nayak, MD, Adjunct Professor of Radiology at the University of California, San Francisco will review 10 CT cases of the thorax, abdomen and pelvis to increase interpretive skills when CT is performed in conjunction with PET and SPECT.

Normal anatomy and common pathological findings will be reviewed in a live, interactive case-based format that simulates clinical practice. Participants will be asked one question after each presentation using an audience response system that allows participants to evaluate their knowledge and diagnostic skills compared to their peers.

Register for this complimentary webinar & check corresponding date and time in your country: www.snmmi.org/iaeaweb

Learning Objectives:
- Understand normal cross sectional anatomy and common variants
- Recognize common pathological findings
- Increase interpretative skill when reading CT performed in conjunction with PET and SPECT

✓ No international calling fees
✓ Check corresponding date and time of webinar in your country*
✓ Limited registration available
✓ View a sneak preview at www.snmmi.org/iaeaweb

Offered as part of a joint educational series between:

IAEA

Society of Nuclear Medicine and Molecular Imaging

IAEA International Atomic Energy Agency

IAEA
Attendance according to Time zones
# Participants statistics

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### Participants/Continent

- **Europe**: 164 participants
- **Africa**: 15 participants
- **North America**: 16 participants
- **South America**: 18 participants
- **Asia**: 38 participants
- **Oceania**: 1 participant
Enhancing Quality of Practice

QA: one of the major projects of NAHU
Outreach

International Conference on

CLINICAL PET AND MOLECULAR NUCLEAR MEDICINE (IPET 2011)

8–11 November 2011
Vienna, Austria

Organized by the International Atomic Energy Agency

350 participants
79 MSs

www.iaea.org/meetings
IAEA-CN-XXX

International Conference on
Integrated Medical Imaging in Cardiovascular Diseases (IMIC 2013)

30 September - 4 October 2013
Vienna International Centre
Vienna, Austria

Organized by the International Atomic Energy Agency
Technical Cooperation Program

- Aimed at knowledge and technology transfer to MSs
- Projects in Human Health accounts for more than 25% of the total TC budget
- Total budget allocated to support NM projects worldwide exceeds 3.5 Mil USD/year
Technical Cooperation Program
NMS

Cycle 2009-11
48 National
8 Regional

+ Cycle 2012-13
19 National
7 Regional

= 67 Nat.
15 Reg.
Summary

- Objective is Capacity building
- Based on education principles
- Need based
- Complete development *versus* Skill enhancement
RLA/6/063 – ARCAL CIX
“Mejoramiento de la atención a los pacientes con enfermedades cardíacas y con cáncer mediante el fortalecimiento de las técnicas de medicina nuclear en América Latina y el Caribe”.
Mejorar la atención de los pacientes con enfermedades cardíacas y cáncer mediante el fortalecimiento de las técnicas de medicina nuclear en América Latina y el Caribe.

El objetivo principal es contar con profesionales debidamente capacitados en las técnicas de ganglio centinela y la cirugía radioguiada, que puedan difundir los conocimientos adquiridos sobre las aplicaciones clínicas con el objetivo final de mejorar la calidad de atención a los pacientes en la región.
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Resultados

There you are gentlemen... the first successful project result.....the Wheel!