Distance Assisted Training Programme for Nuclear Medicine Technologists

DAT Programme in Latin-America

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Montevideo, Uruguay
Latin-America

Overview of the situation:

◆ Demographic data
Demographic data:

Latin-America

- **Area:** 22,743,222 km².
- **Population:** 350,000,000.
- **Nuclear Medicine Services:** ~ 750.
- **Nuclear Medicine Technologists:** ~ 1,700.
## Latin-America

<table>
<thead>
<tr>
<th>Countries</th>
<th>NM Depts.</th>
<th>Techs</th>
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</thead>
<tbody>
<tr>
<td>Costa Rica</td>
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<tr>
<td>Venezuela</td>
<td>19</td>
<td>30</td>
</tr>
</tbody>
</table>
1st DAT Meeting – Montevideo, 2000

- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Costa Rica
- Cuba
- Ecuador
- Guatemala
- Panama
- Paraguay
- Peru
- Uruguay
- Venezuela
Latin-America

Overview of the situation:

♦ *Techs’ organisation*
Problems in organisation:

- Some countries have no NM Society.
- Some countries have Technologists Society but they are no part of the NMS.
- Some others have NMS but they are not part of the ALASBIMN.
Overview of the situation:

♦ Techs’ training
Techs training

- Training levels are very diverse, ranging from short courses to university careers and degrees.
- Most techs have some kind of university bkg but no specific training in NM.
- A significant nº of persons working as techs has not received any kind of training at all.
Lack of technologists’ specific training can be explained by different reasons:

- Few potential applicants for academic careers.
- Lack of governmental policies towards medical technology.
- Unawareness of other NM professionals of the necessity of well trained technologists.
- Lack of official and/or private QC programs.
- Underestimation of the role the tech must play in the design and execution of QC programs.
- Disregarding of existing radiation safety regulations.
- Inexistent technologists’ organisations to look after the improvement of their professional levels.
<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>NMT LEVEL</th>
<th>DURATION</th>
<th>% NM</th>
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</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Non-university techs</td>
<td>9mo.</td>
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<tr>
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<td>Univ. Techs</td>
<td>3ys.</td>
<td>4</td>
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<tr>
<td>Brazil</td>
<td>50% university degree</td>
<td>4ys.</td>
<td>0</td>
</tr>
<tr>
<td>Colombia</td>
<td>Univ. Techs</td>
<td>4ys.</td>
<td>0</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>CNMT</td>
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<td>Non-university Techs</td>
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<td>3ys.</td>
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<td>Guatemala</td>
<td>50% University Techs</td>
<td>3ys.</td>
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<td>Panama</td>
<td>50% University Techs</td>
<td>3ys.</td>
<td>?</td>
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<tr>
<td>Paraguay</td>
<td>No training</td>
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<td>Peru</td>
<td>University Techs</td>
<td>5ys.</td>
<td>10</td>
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<td>Uruguay</td>
<td>CNMT</td>
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<tr>
<td>Venezuela</td>
<td>University Techs</td>
<td>3ys.</td>
<td>8</td>
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</tbody>
</table>
Techs training

**Summarizing:**

- ~ 1,700 NMTs
- Variable degree of training.
- Variable degree of education.
- Very important technological growth.
Latin-America

DAT experience

- Translation of materials
Translation of materials into Spanish

- Took 2 years.
- Translator:
  - NM Tech.
- Proof reader:
  - NM Physician.
- Main difficulties:
  - Different authors, different levels of English.
  - Some references to local devices.
  - Some topics difficult to translate (Behavioural Science).
Latin-America

DAT experience

♦ Course development
The DAT course in Latin-America developed sequentially.

The first group started in September/2000 involving 3 countries.
<table>
<thead>
<tr>
<th>Countries</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
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<td>Venezuela</td>
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Central America & the Caribbean

<table>
<thead>
<tr>
<th>Countries</th>
<th>Students</th>
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<tbody>
<tr>
<td>Costa Rica</td>
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<td>Cuba</td>
<td>6</td>
</tr>
<tr>
<td>Guatemala</td>
<td>2</td>
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</tbody>
</table>
Course development

Difficulties found:

- Distribution of teaching materials
Course development

**Difficulties found:**

- Availability of supporting bibliography
Course development

**Difficulties found:**

- Communication with some country co-ordinators
Course development

**Difficulties found:**

- Heterogeneous degree of institutional support
Strategies for implementation

♦ Close contact with country co-ordinators and supervisors to maintain engagement with the project.

♦ Periodic messages to heads of NM departments acknowledging their support and reporting students evaluations.

♦ National and regional workshops to stimulate and encourage students and supervisors.
Course development

Strategies for implementation

♦ Close contact with country co-ordinators and supervisors to maintain engagement with the project.

♦ Periodic messages to heads of NM departments acknowledging their support and reporting students evaluations.

♦ National and regional workshops to stimulate and encourage students and supervisors (VERY IMPORTANT).
Course development

Difficulty found:

- Limited resources for workshops
  - Costs of external experts
  - Trips for students
  - Time leave at work
Workshops’ Strategies

Workshops were run with participation of supervisors (train trainers):

- To update participants on the overall implementation.
- To provide training on how to conduct interactive, practical student WS using the DAT “WS toolkit”.
- To provide training on assessment procedures with emphasis on standardising methods.
- To discuss problems experienced with the project.
Planar Workshop was run in Costa Rica (March 2002) with participation of supervisors.
Workshops’ Strategies

Outcomes of “train trainers” activities:

♦ Participants improved their understanding of the project goals and implementation methods.

♦ Participants were trained to conduct student WS in their respective countries.

♦ Participants were trained to train local student assessors and to co-ordinate final student assessments.
The agency provided support for planar WS in Ecuador and Colombia, other countries carried it out with local experts.
Workshops’ Strategies

SPECT Workshop was run in Peru (March 2003) with participation of supervisors.
Some countries manifested the need for external experts’ support for the WS.

◆ SPECT WS in Bolivia, Argentina and Chile were supported by a commercial company.

◆ Cuba and Colombia carried out SPECT WS with local assistance.
Completed the course but students got low qualifications in *SPECT* modules.

It was the only country that *didn’t carry out a SPECT WS* due to lack of expert resources.
June/07 a SPECT WS was running supported by a commercial company.

After the WS the SPECT modules were re-evaluate.

Now they are waiting for final assessment.
Course development

- Final assessment
Course development

Difficulties found:

- No funds for external experts
## Course Completed

### Countries

<table>
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<tr>
<th>Countries</th>
<th>Students</th>
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<tbody>
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<td>Argentina</td>
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<td>Cuba</td>
<td>5</td>
</tr>
<tr>
<td>Peru</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL = 32**
Average results in understanding

Basic: 76
Clinic: 81
Advanced: 70
Countries’ performance in DAT pilot course

- Countries: ARG, BOL, BRA, CHI, COL, CRI, CUB, GUA, ECU, PER, VEN
- Performance metrics: Started, Completed
- ARG: 10 Started, 0 Completed
- BOL: 16 Started, 5 Completed
- BRA: 27 Started, 0 Completed
- CHI: 0 Started, 0 Completed
- COL: 23 Started, 8 Completed
- CRI: 0 Started, 0 Completed
- CUB: 10 Started, 5 Completed
- GUA: 6 Started, 0 Completed
- ECU: 5 Started, 0 Completed
- PER: 4 Started, 4 Completed
- VEN: 6 Started, 6 Completed

Legend:
- Yellow: Started
- White: Completed
Distance Assisted Training Programme
for
Nuclear Medicine Technologists

Regional Training Course for DAT Programme Management (INT6053)

REPORT

Dates: 3-7 March 2007

Host Institution: Escuela Universitaria de Tecnologia Medica
Uruguay

Venue: Hotel Palladium
Montevideo, Uruguay

Course Director: Ms. Margarita A Núñez Rodriguez

IAEA Coordinator: Dr. Naoyuki Watanabe

IAEA Experts: Prof. Brian F Hutton, Heather E. Patterson

Country representation:
Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica Republic, Ecuador, Guatemala,
Haiti, Mexico, Panama, Nicaragua, Paraguay, Peru, Uruguay

Meeting Objectives:
• Ensure participants have full comprehension of revised DAT programme
• Develop realistic work plans for national implementation of DAT
• Assess each country’s status with regards to meeting minimum criteria for DAT implementation
Recommendations:

Following discussions at the conclusion of the meeting the following recommendations were recorded:

- The above summary indicates that 4 countries are capable of immediate self-sustained use of the DAT materials and at least 6 additional countries have definite potential. Countries were informed of the mechanism that should be used to apply for use of the DAT materials. Applications should be submitted after October 2007 with a view to commencing the program in early 2008.

- Countries with poor nuclear medicine infrastructure – technologists could benefit from IAEA fellowships e.g. Nicaragua, Panama, and Guatemala. Until there is a critical mass of local expertise it is suggested that conventional training under fellowships is more appropriate. It is however recognised that some of the training materials contain very useful practical information of relevance in establishing NM services. It would be useful if during training fellowships trainees could be exposed to the training materials as this may aid the future implementation of DAT in these countries.

- Several of the countries that have interest in conducting training would benefit from some additional assistance. In particular some countries have minimal basic science support and these could benefit from having access to some form of regional support network. The network would also form a focal point for regional discussion on technologist training in general. It is proposed that ALASBIMN assist in the provision of regional support to strengthen the training development in some countries. ALASBIMN have already indicated a willingness to be involved with possible activities including: to conduct workshops (possibly in association with ALASBIMN meetings), assist where human resources are limited, act on behalf of participating countries in attracting commercial support for DAT activities.
It is very important to remark on the importance that this training could have for the Latin-American region. The programme in the region will have the purpose of raising the professional level of nuclear medicine technologists and accomplishing an educational standardization. An important number of technologists could benefit from it, especially those with no real possibilities to apply for other academic activities.

There is already some initial experience in several Latin-American countries where existing teaching materials were tested with a limited number of registered students. High level of interest has been generally expressed and the countries have progressed themselves with minimal external support.
Management of the DAT course through ALASBIMN

♦ In view of the situation, a proposal for the implementation of the DAT Programme in Latin-America through the Technologists Committee of ALASBIMN was submitted to the IAEA.
Proposal presented to the IAEA by the SBIMN (TCA) for the implementation of the DAT Programme in Latin-America.

1. According to the defined implementation guidelines, any country interested in carrying out the DAT programme should apply for receiving the teaching materials through the National Responsible Authority (NRA) sending an application to the TCA together with a proposed organisational structure, description of available resources and working plan.

2. The TCA should evaluate the application and assess the feasibility of the program in the country.

3. If TCA evaluation is positive, this body will request the materials to the IAEA on the country’s behalf.
The TCA will then assume a role in distance monitoring of the programme by:

- Receiving periodical reports from the NRA or the NC in order to evaluate the progression of the programme.
- Providing advice for taking corrective actions in order to adhere to guidelines, timetable and general management of the programme.
- Seeking financial support from different sources to help in expert visits, WS and other activities when and where necessary.
- Organising a DAT WS for students, national coordinators or supervisors within the biannual ALASBIMN Congress.
- Assisting in student evaluation and final assessments.
♦ In the case the proposed workplan is considered feasible with minor changes or not feasible at the moment, the TCA will try to identify areas to be improved in order to meet the basic requirements for acceptance, providing advice in how to achieve such improvements.

♦ ALASBIMN will share the responsibility of the final outcome with the NRA either by co-signing the Certificate of Achievement through the president of the TCA or by issuing a parallel certificate in addition to that issued by the NRA.

♦ Web-based resources, information, additional teaching materials, guidelines, useful tips and status of programme implementation in participating countries will be placed in the official ALASBIMN website, in the Continuing Education ALASBIMN website and/or in the ALASBIMN Journal.
ALASBIMN - IAEA

- DAT Application Form
- PDM
- Activity Work Plan

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
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<th>2008</th>
<th>2009</th>
<th>2010</th>
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</table>
Asociación Latinoamericana de Sociedades de Biología y Medicina Nuclear (ALASBIMN)

IMPLEMENTACIÓN DEL PROGRAMA DAT

País:
1. Institución responsable del programa
2. Miembros del Comité de Dirección
3. Nombre del Coordinador Nacional
4. Instituciones que participarán del programa
5. Número de estudiantes
ALASBIMN - Work Plan (example)

<table>
<thead>
<tr>
<th>CRONOGRAMA DE ACTIVIDADES</th>
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<tbody>
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<td><strong>AÑO</strong></td>
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<td>ACTIVITY</td>
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<tr>
<td>Remisión aplicación Colombia</td>
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<td>Aceptación y recibo del CD por parte de ALASBIMN</td>
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<td>Primera reunión comité de dirección</td>
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<td>Comienzo distribución CDs</td>
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<td>Comienzo del curso</td>
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<td>Evaluaciones</td>
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<td>Revisión del progreso</td>
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<td>Taller de mitad de curso</td>
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<td>Taller de SPECT</td>
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<tr>
<td>Evaluación Final</td>
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</table>
Current Situation of the DAT in LA

Argentina:
- 5 NM departments
- 10 students
- Haven’t started yet

Bolivia:
- 5 NM departments
- 12 students
- Haven’t started yet

Colombia:
- 43 NM departments (in 16 cities)
- 72 students
- Starting date: June 1st, 2008
- Status: studying module 7
Current Situation of the DAT in LA

**Guatemala:**
- 5 NM departments
- 11 students
- Haven’t started yet

*Despite they have presented the application form and it seems to fulfill the requirements, we think they will need help to be able to start the training.*

**Peru:**
- 15 NM departments
- 25 students
- Starting date: April, 2008
- Status: studying module 9

**Other countries:**
- *Paraguay* has presented the application form but has not the minimum requirements.
- *Cuba* is expected to submit the application form on the following months.
- *Mexico*???
Current Situation of the DATOL in LA

We have received individual applications from 27 technologists to participate in the pilot PET course (English version):

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<th>Countries</th>
<th>Nº of students</th>
<th>Modules</th>
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<td>PET-CT</td>
</tr>
<tr>
<td>Mexico</td>
<td>3</td>
<td>PET-CT</td>
</tr>
<tr>
<td>Uruguay</td>
<td>8</td>
<td>SPECT-CT</td>
</tr>
</tbody>
</table>
Future of the DATOL in LA

- Could be many other applications from the region.
- Many more techs could benefit from DATOL.
- But…

Translation of the materials into Spanish is absolutely essential for our region.
Thank you!