AimContaminations of the operator and administration room caused by administration of Technegas have been reported previously. Main causes of the contamination are leakage of the radioactive gas through the filter of patient administration set and expiration of the patient during or after the inhalation. The aim of this work was to evaluate the effectiveness of a specially build-up smoke evacuator in diminishing contamination.Materials and methodsThe exhaust fan consisted of Cat Clean Air Tech surgical smoke evacuator with Alsident system flexible extraction arm and round hood. The activated carbon filter in the smoke evacuator was replaced by special resin-impregnated sheep's wool.The administration of Technegas to the patients was performed in a separate room apart from gamma camera according to manufacturer's instructions. Patients were in supine position. The hood was placed as close as possible above patient's face such that the patient administration set with a filter was situated under the hood.The radioactive surface contamination was measured using the wipe test technique. Three different locations (area of each 100 cm2) were marked in the administration room: location A beside patient bed, B on a shelf behind operator, and C on the upper surface of Technegas apparatus. Location B was wiped with a moistened wipe before the administration for the measurement of the background activity in the room. All three areas were wiped after administration of Technegas. The wipes were placed in vials and counted in a gamma counter for 1 minute.ResultsThe surface contamination measurement was performed after 14 administrations, 7 of which were without exhaust fan and 7 with exhaust fan. When exhaust fan was not used the median of total counts of wipe samples was 1692 (range 217-24036) while with exhaust fan the median of total counts of wipes was 551 (range 69-2695). The median of background samples was 55 (range 17-353) and 42 (range 19-165), respectively. Thus the use of exhaust fan during administration leads to 3-fold decrease in contamination. The use of the fan also limited the peak values to one tenth compared with the no-fan contamination values.ConclusionsThe use of specially build-up smoke evacuator can reduce radioactive contamination caused by expiration of Technegas thus reducing radiation doses received by personnel.

P69 — Monday, October 17, 2005, 2:30 pm — 4:00 pm

General Topics: Miscellaneous

P825

What should we teach the nuclear medicine specialists of the future?

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The background against which we practise nuclear medicine is evolving rapidly. Changes are occurring in undergraduate medical education (reduction in factual burden, increased emphasis on practical and transferable skill and training of a generalist rather than a mini-specialist), in patient expectations (due to greater knowledge and easy access to information, a desire for clearer information and for greater involvement in decision making) and in medicine generally (breakdown of interdisciplinary and interprofessional barriers, drive to evidence based practice, use of guidelines and protocols). Changes are also occurring in nuclear medicine (molecular imaging with more specific radiopharmaceuticals, anatomical/functional correlation, new/aggressive therapies).All of this has implications for how we should train nuclear medicine practitioners (new and existing!).•Nuclear medicine training must be broad, give a clear understanding of disease processes and emphasise the use of nuclear medicine only when relevant. It must promote an understanding of the questions clinicians wish to have answered when they request an investigation and must train nuclear medicine practitioners to provide a clinical opinion as well as a description of findings in a report. Without a clinical opinion reports can be issued by well-trained technologists. (Much less expensive than an MD!)•All parishioners must have a high level of expertise in the scientific and clinical aspects of the specialty. In addition to the scientific disciplines traditionally taught in nuclear medicine training some others (for example, cross sectional anatomy, genetics, molecular biology) are now essential.•In nuclear medicine therapy we must prepare trainees to deal with sicker patients and to use therapies which have more severe side effects. Learning to manage patients with other clinicians such as oncologists and intensivists is essential.•Communication skills are crucial - with patients, colleagues, health administrators and funders. The skills required in communicating to each of these groups are different.•We must teach evidence-based practice. What is it? How can I find it? How can I evaluate evidence? How do I communicate evidence to different groups?To deliver these changes in nuclear medicine training is challenging, particularly since many current practitioners are uncomfortable with some of them. If we do not respond to the challenge, however, there is a real risk that nuclear medicine will be marginalised and will probably deserve to be so. If that happens we, the current nuclear medicine specialists, will be to blame.

P826

Medical Data Archiving in Nuclear Medicine - the best solution for backup the data

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Background and aim: Picture archiving and medical data backup are an important problem for the Nuclear Medicine Departments. Storing medical examinations (pictures and movies) in only one place is dangerous. Regular backup of all the performed examinations is necessary for restoring lost data, comparing following examinations, and for scientific purposes. Nowadays we can collect the data on hard drivers, optical and magneto-optical disks, etc. We decided to compare the medium cost of 1GB of information archiving on different storage media and choose the most convenient and cheapest solution for nuclear medicine departments. Material: we count costs of 1GB storing information divide price of storage media by its capacity. We also added the information about the device price used to record the media. All the prices were medium prices from the largest internet computer shops in the USA, Germany and Poland in March 2005. Results: The price for 1GB of recording data varies from 0,06 Euro (DVD-R+/-), 0,12 Euro (streamer tape), 0,35 Euro (CD), 0,5 Euro (1TB External Hard Driver) to 9,75 Euro (magneto-optical disk). The recording drivers price varying from about 55 Euro (DVD +/-RW driver), 500 Euro(1TB External Hard Driver) to 1000-6000 Euro (Streamer Ultrium 460). Conclusions: The method of pictures and movies archiving is dependent on the quantity of examinations performed in a given Department. In small Departments (100-150 examinations per week - 500MB-1GB of data per week) the best solution seems to be recording on DVD storage media. In case of the biggest Departments (300 and more examinations per week or - 3GB and more of data per week) with PET-CT (each examination takes about 350 MB) archiving data on streamer tapes or external hard drivers should be sufficient.

P827

The OASIS Speech Recognition System for Dictating Medical Reports

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Owing to the remarkable development of speech recognition technologies recently the attention of the medical society has been drawn to the speech based development of clinical systems. The appreciation of such a system depends on the speed of recognition, the quality of the applied medical linguistic knowledge, the recognition accuracy and also the achieved speaker independency. The more specific the speech recognizer's linguistic environment is, the better the achieved results are. The developers of speech technologies at the present state of research found medical applications especially suitable in their search for proper target-applications. For commonly used languages such systems are still exicting, but for smaller languages, with specific linguistic features, few software packages for dictating medical reports have been developed up to now. We developed a general speech recognition core module for the Hungarian language use (OASIS), for dictating medical reports for nuclear medicine and radiology. The core module is made up of a so called acoustic model which is capable of recognizing the phoneme set of the Hungarian language and representatively modeling it. The building of the module was carried out based on a huge speech corpus. Currently, we have built a language module applicable for dictating medical reports to thyroid scintigraphy on the bases of 9231 written thyroid medical reports. The reports contain over 2500 words and 11000 different word pairs. We modeled the sentences of the reports with a rule system consisting of several hundred rules. The core and the language module together gave a ground for the development easy to use. Windows based software package for dictating thyroid gland medical reports. The general speech technology features of the software are: speaker independent speech recognition, speaker adaptation option, commutable linguistic/grammatical model, language adaptation, memorizing individual phrases. The adaptation capability and the recognition performance of the system is tested by using a speech test corpus consisting of five persons' utterances. For each person uttered a one page text which served for adapting the acoustic model. Following the adaptation phase the increase in the recognition performance was tested, with the result of over 90% correct recognition.

P828

TENPET: Integrated telemedicine platform for positron emission tomography

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Objectives: TENPET (Trans-European Network for PET) is a multi-centre project financially supported by the European Commission (Information Society, eTEN program). The objectives of TENPET focus on the provision of integrated teleconsultation services for clinical PET applications in oncology. The platform aims in improving communication between different departments involved in the provision of a PET service, as well as permit remote consultation of patient data. **Methods:** The TENPET platform is designed for Windows NT/2000/XP and consists of a number of individual modules which although run as independent processes they operate in synergy. The main application is an integrated tool able to handle dynamic volumetric datasets in terms of visualisation, analysis and processing specifically designed for the needs of oncology PET studies. Additional modules cover tools such as multimodality image fusion. The data access is based on a database server-client model, while an integrated telecommunication service (TeleDaemon) is handling the exchange of messages between workstations. Permitted communication partners of a TENPET workstation are part of an internal phonebook. A telecommunication between two TENPET platforms can be either online or offline with images transmitted only if they do not exist in the database of the remote communication partner. The use of short commands for the synchronisation of two connected applications enables online consultations over connections with a low bandwidth using the principle of interface sharing. The platform has been under evaluation in a number of clinical trials focusing on the scenarios of (i). computer supported collaborative work with external partners, (ii). utilisation of PET services in radiotherapy and oncology departments, (iii). remote reporting by nuclear medicine physicians, and (iv). teleconsultation sessions between PET sites. An evaluation form for the different type of scenarios envisaged has been created based on the assessment of easiness of use, functionality of image display and analysis tools, as well as the time of transmission and duration of teleconsultations. **Results:** A number of telecommunication sessions between different centres in the consortium have demonstrated a time efficient and secure approach in sharing experience for the interpretation of PET cases. In addition, during remote reporting sessions excellent easiness of use was reported in the majority of the cases. **Conclusions:** TENPET allows through the provision of a bundle of services integrated on an easy to use user interface, a fast communication between PET physicians and other medical specialities, as well as providing an efficient remote reporting facility.