



# IAEA

*Atoms for Peace: The First Half Century*

1957–2007

## ***Speeding up diagnostics with modern imaging technology in the Czech Republic***

### ***The challenge...***

In the late 1990s, with a view to improving the effectiveness of the diagnosis of cancer and heart diseases, the two top 'killer diseases' in the country, the health authorities in the Czech Republic and the Nuclear Research Institute in Rez built a cyclotron for the production of short lived radioactive pharmaceuticals. These were to be used in positron emission tomography (PET), a proven and effective non-invasive diagnostic method. PET is of critical importance in oncology, where it helps the treating physician to decide the method of treatment (surgery vs. chemotherapy) and to ensure a successful recovery.



### ***The project...***

In 1996, the IAEA approved Model Project CZR/4/007 and contributed US \$1.6 million towards the acquisition of equipment. In 1997, it was decided that the Na Homolce hospital in Prague would serve as the location for a fully fledged PET medicine centre. This centre would include, inter alia, an accelerator and laboratories for the production of radiopharmaceuticals, along with dedicated infrastructure for PET diagnostics.



### ***The impact...***

Through this Model Project, which was completed in 2001, state of the art PET technology was applied for the first time in central and eastern Europe. Subsequently in 2005, five PET scanners were put into operation in Prague, Brno, Plzeň and Olomouc. That same year, records show that 1185 PET examinations were performed per million inhabitants in the country, thus placing the Czech Republic in the 7<sup>th</sup> position for the number of diagnostic procedures with PET in Europe. In 2006, construction of a new PET centre was launched in Brno. This centre opened its doors to patients in 2007.



CZR/4/007: Cyclotron for Short Lived Medical Radioisotopes