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| **Joint ICTP-IAEA Workshop on Radiotherapy Dosimetry Audit Methodologies**  28 Nov – 02 Dec 2022  Trieste, Italy  **Course Directors:**  M Severgnini, Trieste Hospital, Italy  J Swamidas, IAEA, Austria.  **Local Organiser**  R Padovani, ICTP, Italy.  **Speakers**  A Alves, ACDS, Australia  C Clark, NPL – RTTQA, UK A Embriaco, ENEA, Italy C Fiandra, University of Turin, Italy N Jornet, Hospital de la Santa Creu i Sant Pau, Spain P Kazantsev, IAEA, Austria S Russo, Florence Hospital, Italy | | |
| **Monday, 28 Nov 2022** | | |
| **Time** | **Topic** | **Speaker** |
| 9.00-9.30 | Welcome and Introduction | R Padovani / M Severgnini / J Swamidas |
| 9.30-10.00 | Entrance Test | P Kazantsev |
| 10.00-10.30 | Accuracy requirements in Radiotherapy –  (IAEA HHS 31) | M Severgnini |
| 10.30-11.00 | Coffee |  |
| 11.00-11.45 | Discrepancies in Radiotherapy and the need for independent dosimetry audits. | C Clark |
| 11.45-12.30 | Lessons learnt from dosimetry audits | N Jornet |
| 12.30-2.00 | Lunch |  |
| 2.00-2.30 | Dosimetry audits for Clinical Trials and accreditation | C Clark |
| 2.30-3.00 | IAEA’s activities in dosimetry auditing and global availability of dosimetry audit services in Radiotherapy – An overview | J Swamidas |
| 3.00-3.30 | ACDS experience in dosimetry audit – A case study | A Alves |
| 3.30-4.00 | coffee |  |
| 4.00-5.30 | Participants to present their experience, infrastructure, activities in audits and challenges. | All Participants (5 min each) |
| **Tuesday, 29 Nov 2022** | | |
| 9.00-9.45 | Dosimetry audit types (onsite, remote, virtual) – An overview | A Alves |
| 9.45-10.30 | Phantoms and dosimetry systems used in audits – An overview. | N Jornet |
| 10.30-11.00 | Coffee break |  |
| 11.00-11.45 | Characterization of Solid-State Dosimetry Systems  a. Thermo Luminescent Dosimetry (TLD) | A Embriaco |
| 11.45-12.30 | b. Optically Stimulated Luminescent Dosimetry (OSLD) | S Russo |
| 12.30-2.00 | Lunch |  |
| 2.00-2.45 | c. Radio Photo Luminescent Dosimetry (RPLD) | P Kazantsev |
| 2.45-3.30 | Film Dosimetry | A Alves |
| 3.30-4.00 | Coffee break |  |
| 4.00-4.45 | Other detectors – IC, EPID, log files, microdiamond and others. | A Alves |
| 4.45-5.30 | Uncertainty Budget for dosimetry audits | A Embriaco |
| **Wednesday, 30 Nov 2022** | | |
| 9.00-9.45 | Auditing Reference beam output (Photons and Electrons) | S Russo |
| 9.45-10.30 | Auditing in non-Reference conditions, off-axis, inhomogeneous calculations - TPS. | C Fiandra |
| 10.30-11.00 | coffee |  |
| 11.00-11.45 | Methodology for End-to-End IMRT audit – Remote. | C Clark, P Kazantsev |
| 11.45-12.30 | Methodology for End-to-End IMRT audit – onsite -SHANE HN IMRT. | N Jornet, A Alves |
| 12.30-2.00 | lunch |  |
| 2.00-2.45 | Methodology for small field dosimetry audit. | P Kazantsev |
| 2.45-3.30 | Auditing SRS, SRT, SBRT. | C Clark |
| 3.30-4.00 | Coffee |  |
| 4.00-4.45 | Auditing motion management techniques. | C Fiandra |
| 4.45-5.30 | Auditing Brachytherapy. | J Swamidas |
| **Thursday, 01 Dec 2022** | | |
| 9.00-9.30 | IAEA Guidelines for establishing national Dosimetry Audit Network (DAN) for radiotherapy - Structure, Development, Operations and Resources. | J Swamidas |
| 9.30-10.00 | Quality management system of dosimetry labs based on ISO 17025. | A Alves |
| 10.00-10.30 | Maintaining traceability in dosimetry audits. | A Embriaco |
| 10.30-11.00 | Coffee |  |
| 11.00.11.30 | Reporting of results. | A Alves |
| 11.30-12.30 | Follow-up of poor results, examples from IAEA. | J Swamidas (M Carrara) |
| 12.30-2.00 | Lunch |  |
| 2.00-3.00 | Transport to hospital |  |
| 3.00-4.30 | Practical – End to End IMRT audit using SHANE phantom. | P Kazantsev / R. Vidimari / N Jornet / M Severgnini / All Faculty |
| 4.30-5.00 | Coffee |  |
| 5.00-7.00 | Practical – Small Field dosimetry audit. | P Kazantsev / R. Vidimari / A Alves / C Clark / All faculty |
| **Friday, 02 Dec 2022.** | | |
| 9.00-10.00 | Presentation of results from Practicals. | Participants |
| 10.00-10.30 | Challenges in dosimetry audits. | N Jornet |
| 10.30-11.00 | Coffee |  |
| 11.00-11.30 | Comprehensive clinical audits in Radiotherapy – QUATRO - An overview. | J Swamidas |
| 11.30-12.00 | Novel Methodologies in dosimetry audits – future directions. | C Clark |
| 12.00-12.30 | Exit Test. | P Kazantsev |
| 12.30-1.00 | Course evaluation and Feedback. | J Swamidas / R Padovani/ M Severgnini |
| **1.00** | **Lunch and Goodbye** |  |

Note to speakers: Kindly prepare your talk to allow 10 min of Q&A at the end of each talk.