

Meeting minutes of the OPTIC subcommittee during the PTCOG conference in Madrid

Date: Tuesday, June 13th2023

Time: 11:45 to 13:30

On site participants: ~56

Online participants: ~30

Meeting hosted by Co-chairs:

Kavita Mishra (UCSF, USA), Jan Hrbacek (PSI, CH), Jens Heufelder (Charité, GER)

Subcommittee matters:

- Co-Chair transitions:
Andrzej Kacperek (GB) handed over to Jens Heufelder in 2022/2023, Kavita Mishra will hand over to Helen Shih (MGH, USA) in 2023/2024
- Subcommittee membership ~150 people
Core leadership group (15) for planning First Ocular PT Symposium, white paper, and survey Group is open to everyone interested
- Milestones
White paper “State of the field” summarizing online symposium and current best practices (Ready for submission)
2nd OPTIC survey completed and analyzed, results presented at PTCOG: Pediatrics session (limited) and OPTIC Subcommittee (detail)
OPTIC First International Symposium focusing on seven major subtopics: treatment planning, new developments for ocular proton therapy: patient positioning, CT only for eyes, MRI-based planning, future of ocular proton therapy installations: low energy machines and gantry options
- Goals/plans
Publication of the white paper “State of the field”
Submission/publication of the 2nd OPTIC survey results
In winter 2023/early spring 2024: 2nd online symposium (preparations will start after PTCOG meeting)
- A wish for next PTCOG meetings: A dedicated scientific OPTIC session in the scientific program addressing clinical and physics topics. (This year OPTIC talks were spread over the whole program. Enough material for dedicated OPTIC session was there).

Report on the OPTIC survey – Linda Mortimer (Clatterbridge Cancer Centre, GB)

- Presentation will be shared with people who attended the subcommittee meeting
- Short summary
Format: Survey Monkey, 127 questions
21 participating centres: 17 operational & 4 with (potential) plans to become operational
Increase in number of centres; small increase in total treatments
Similarities in diagnoses & prescriptions (UM); more variation for conjunctival lesions
Most centres still using TP systems which are no longer supported (EyePlan, Octopus & EOPP) but have (or considering) plans to address this (9 specifically mention RayOcular / RayStation / RaySearch
Increased use of CT/MRI since 2015 survey; further increase expected with new TPS
Increased diversity of OPT systems since 2015: accelerator energy, beamline geometry,

patient position

Predicted increase in degraded high-energy beams with pencil beam scanning (PBS)

- Next Steps:
Share/publish results of 2022 survey
Work together to support future developments

Transition from EyePlan to RayOcular: Clatterbridge experience (so far) – Katie Sanders (Clatterbridge Cancer Centre, GB)

- Presentation will be shared with people who attended the subcommittee meeting
- Short summary:
Clatterbridge Cancer Centre >30 years experience planning ocular proton treatments using EyePlan (no longer being developed or supported)
RayOcular (RaySearch Laboratories) replacement TPS - part of a wider proton service
Transition to RayOcular multi faceted project – many problems to solve (Limited time, limited data)
Moving to RayOcular will change planning process: Increased complexity (decisions about parameters that are currently ‘fixed’); more information to exploit (opportunity to make improvements)
Initial results have shown that eye models, clip patterns and distributions for the 2 systems are qualitatively similar

Likelihood planning time will increase - explore other efficiency savings
Referrer feedback: “I have no doubt using the RayOcular seems a step in the right direction in precision treatment of ocular tumours”

Eye treatment proposals - Next step technical developments - Dr Georgios Sakas, CEO Medcom

- Presentation will be shared with people who attended the subcommittee meeting
- Short summary:
Introduction to MedCom
Image acquisition (Integrated 2D image handling, 3D scanning by CT/CBCT); Positioning prior to irradiation (auto-calculate 6 DOF correction vector); Monitoring during irradiation (camera: auto-detection of eye movement, calculate eye movement deviations & statistics); Interfacing RaySearch (Interpret Raysearch DICOM Format (in/out), Geometry transformation (including Light and Torsion), Display contour images)
Use of CBCT as CT for eyes in combination with metal artefact reduction
VeriSuite Interfaces (DICOM in/out), interfaces to Aria and Mosaic
- Interested people should contact Dr Sakas: gsakas@medcom-online.de

Future of ocular proton therapy (OPT) installations (low energy accelerators / gantry based OPT):

- Short overview of history, technical challenges in OPT and actual situation by Jens Heufelder (Charité, GER):
OPT started at research facility in Boston (dedicated beam line) in 1975, followed by low energy machines at other research institutes and moved clinical/hospital based dedicated OPT beam line to gantry based installations.

Technical challenges: treatment planning (small volume, fundus imaging), patient positioning (better 0.3 mm), necessary dose rate for appropriate fraction time.

Actual situation: No vendors for dedicated OPT installations on the market.

Future of Nice's low energy OPT – Juliette Thariat (Nice/Caen, FR)

- Presentation will be shared with people who attended the subcommittee meeting
- Short summary:
short comparison between low energy OPT, gantry based OPT and Cyberknife
future perspective of nice OPT: replacing old treatment chair by CE marked 6D robot chair
and replacing modulator wheel with ridge filter, both in 2024
working on a flash therapy set-up; beam current of accelerator would be sufficient

Gantry based OPT, a physicists' perspective – Jay Saini (UW, Seattle, USA)

- Presentation will be shared with people who attended the subcommittee meeting
- Short summary:
started at Uniform scanning / general purpose beamline (400 patients treated)
change to PBS with collimation: direct MUs from TPS (ability to use MC for dose calculation),
full 3D planning, modern planning interface
comparison of lateral and distal penumbra to other OPT installations

End of meeting