Development and Implementation of a 3D-Printed Patient-Specific Cerrobend Mould Workflow

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Abstract
Integrating a Prusa i3 MK3S+ FDM 3D printer into our clinic’s electron cutout workflow expedites the procedure, eliminates a number of sources of error inherent to the current technique, and reduces employee exposure to hazardous materials.

Introduction
Our proposed workflow redesign integrating our clinic’s 3D printer is shown in Figure 4. This workflow tightly integrates with the existing treatment planning process and can be simplified and expanded in the future with the following ways:
1) A fully automatic export filter converts the “true” contour to a readable format
2) Two-click automatic conversion replicates the “true” contour In a printable format
3) With a well-calibrated printer, manufacture is a functionally standardized process
4) Our jig allows a single global orientation for assembly, removing geometric errors

Methodology
The .STL is imported into the PrusaSlicer software package, which “slices” the .STL by writing

Results
Given the inherent uncertainty of an EMC calculation, our deviations from TPS predicted dose across all cutouts are very reasonable. The workflow itself has proven flexible and easy to

Conclusion
One future goal is to attempt the print with an increased nozzle size, as increasing the rate of

Sources and Citations
1: https://www.aad.org/media/stats-skin-cancer
2: https://pypi.org/project/mapbox-earcut/
4: https://pypi.org/project/numpy-stl/
6: https://pypi.org/project/mapbox-earcut/