



OptiBol

SOFTWARE INSTRUCTIONS

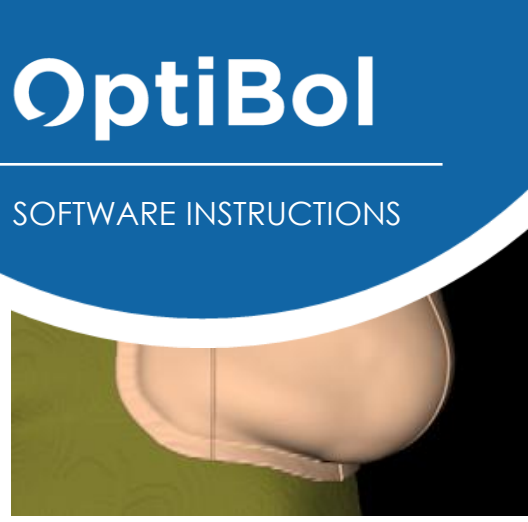
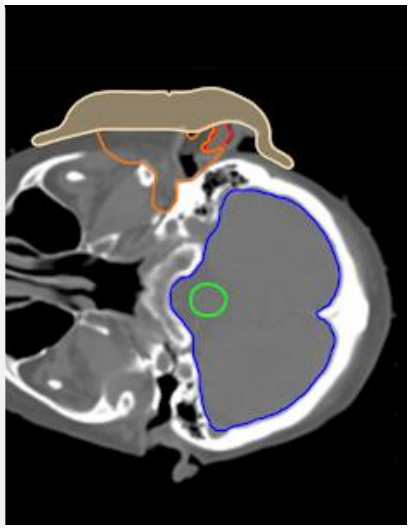
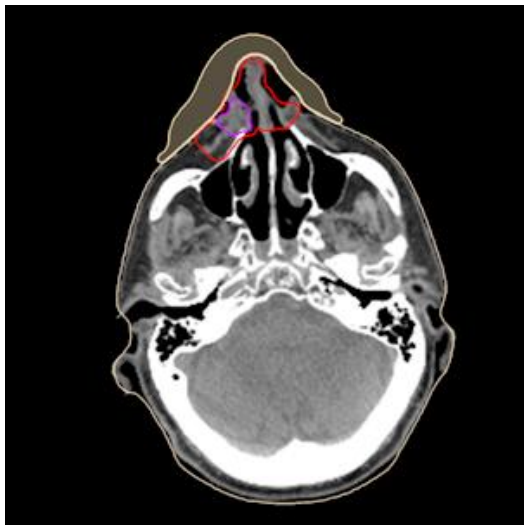
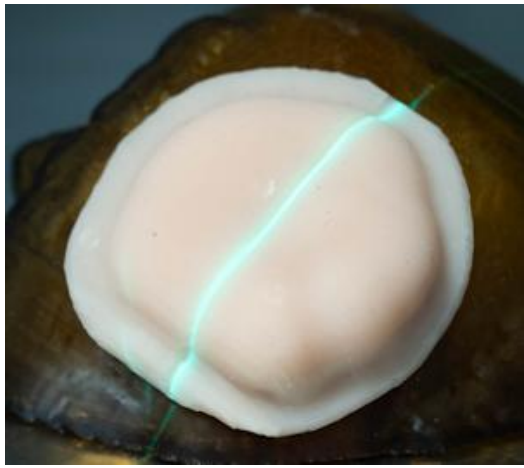
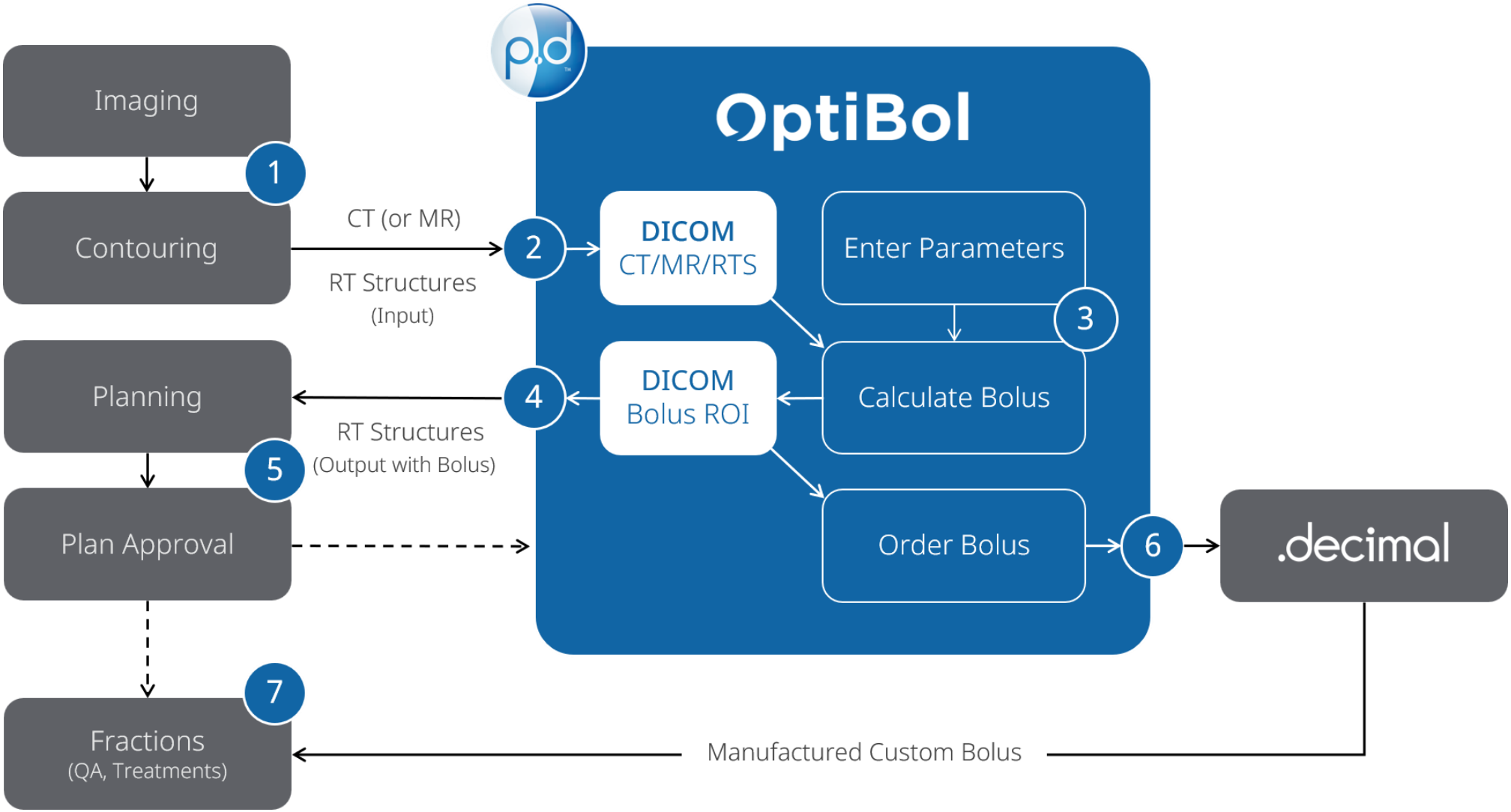


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Overview of Workflow



(1.1) Prepare Inputs: Images and Structures

Image Requirements

- Axial CT image series

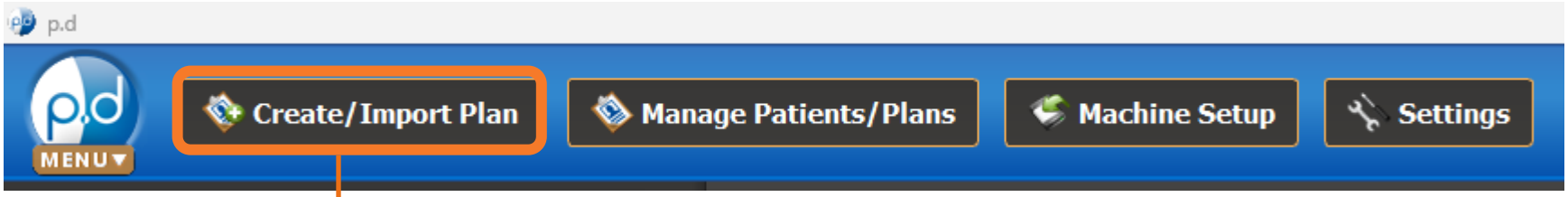
Structure Requirements

- **External (body) contours**
  - The shape of the external contour will drive the design of the inner (patient-side) of the bolus, so make sure that contour is accurate and includes any non-patient material that you intend to be between the patient and the bolus during treatments.
- **Target(s) contours**
  - If you have multiple nearby targets for which you want/need a bolus, create a union of those targets so that all target volumes are captured in one ROI for the bolus design. For example, if you have abutting PTV1 and PTV2 on/near the skin, create a union as “PTV Union” or “PTV1 + PTV2”.
  - Ensure the target contour used for bolus design does not go outside the external contour. Crop at the patient surface if necessary.
  - If the physician has not completed target contouring but has identified regions of the skin to be bolused, you can create a simplified bolus design using the OptiBol tools. First, contour the skin regions requiring coverage, then crop this "bolus coverage" contour at the patient surface. This approach creates an OptiBol similar to a uniform-thickness bolus, but with smoother quality, tapered edges, plus the option for lateral (outside) margins and alignment guides.
- For OptiBol design, ***you do not need the organ-at-risk (OAR) contours completed yet***.
  - If you have defined all/some of the OARs, that’s fine, but they will not be needed for bolus design.
  - You can continue to work on the OAR contouring after you have created your bolus structure.

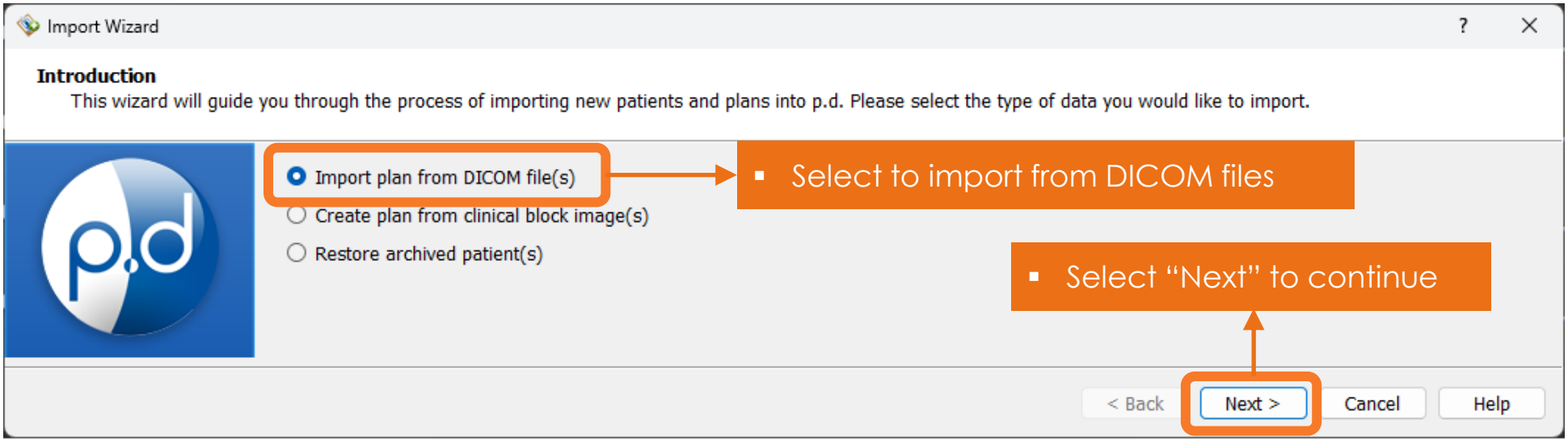
Export and Store as DICOM

- Use the TPS (or contouring system) DICOM export method to save the DICOM CT Image Series and the DICOM RT Structure Set to a specified folder.
- This DICOM storage folder needs to be accessible to the p.d software to read the image and structure set files.

(2.1) IMPORT DICOM FILES INTO P.D

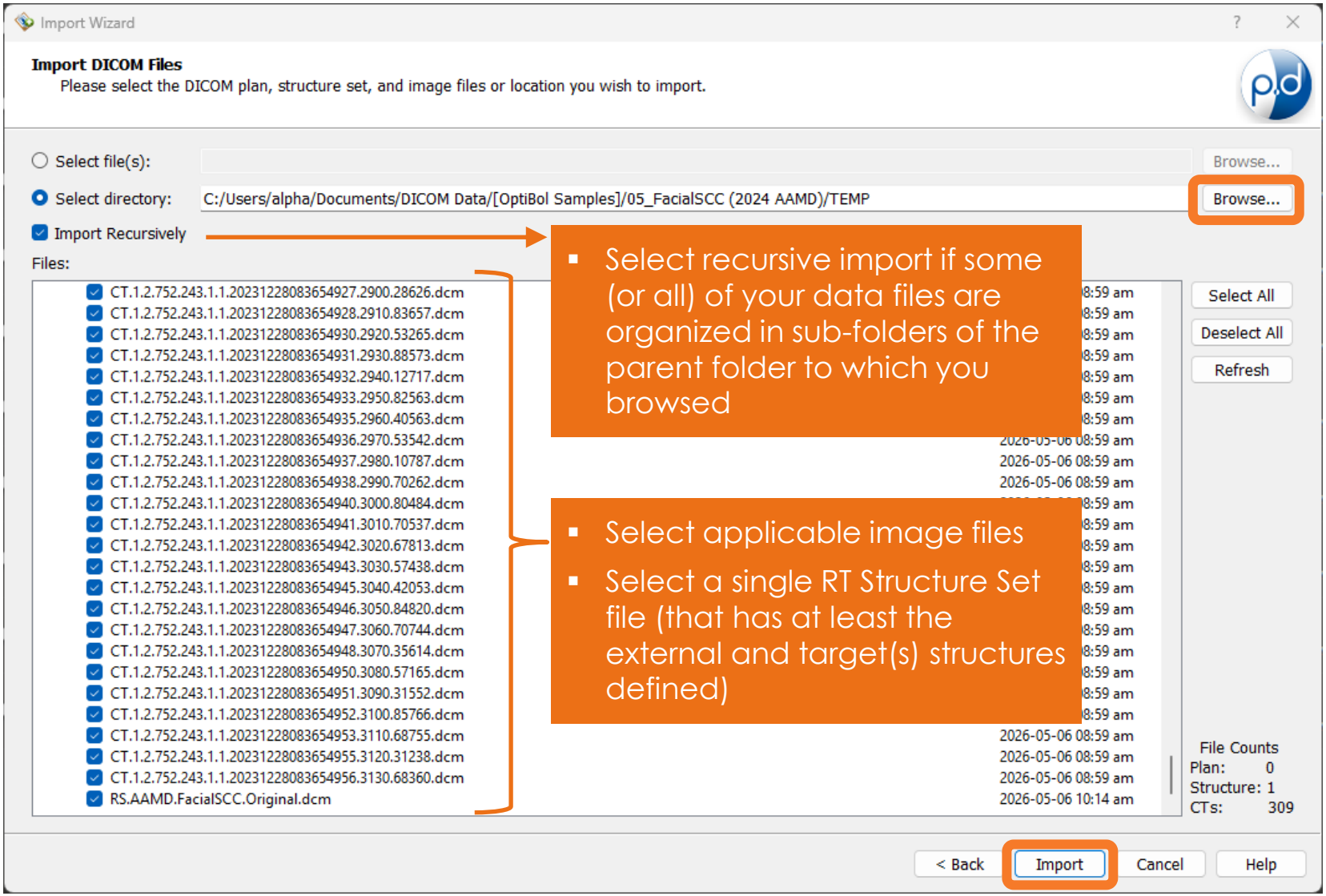


- Select the "Create/Import Plan" tool



- Select to import from DICOM files
- Select "Next" to continue

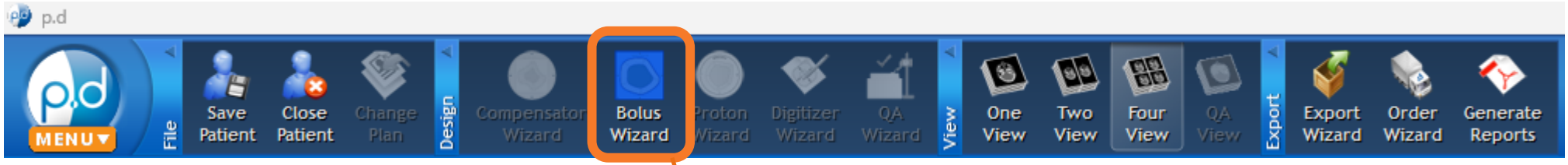
(2.2) IMPORT DICOM FILES INTO P.D



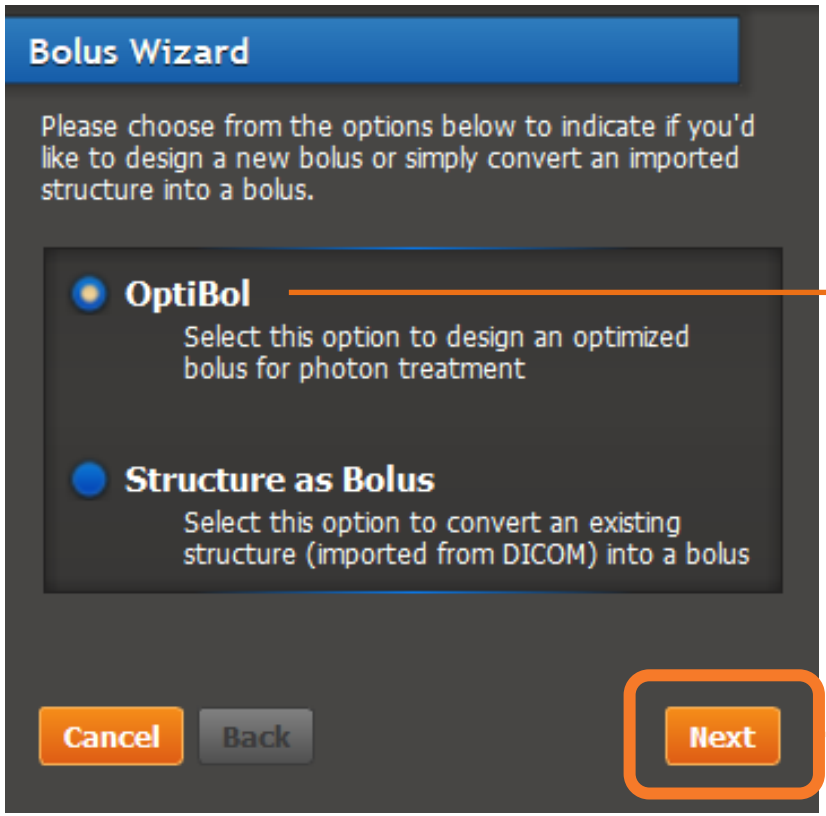
- Select recursive import if some (or all) of your data files are organized in sub-folders of the parent folder to which you browsed

- Select applicable image files
- Select a single RT Structure Set file (that has at least the external and target(s) structures defined)

(3.1) CREATE OPTIBOL: BOLUS WIZARD



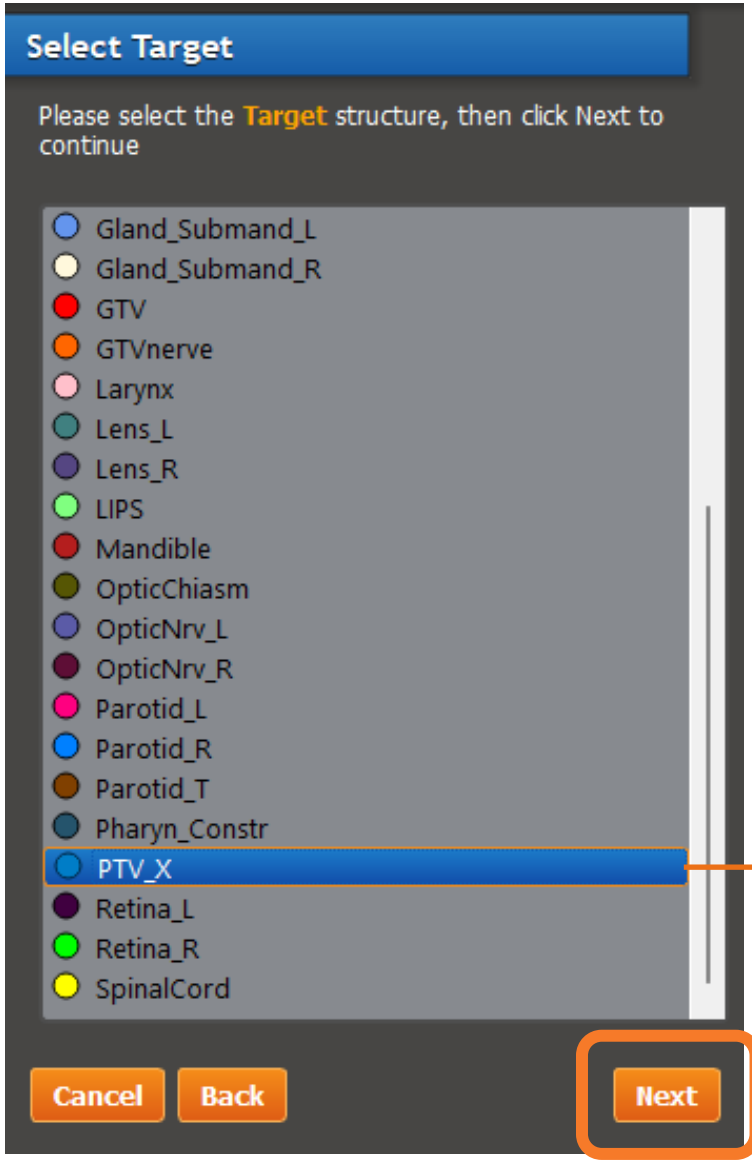
- Select the "Bolus Wizard"



- Select the "OptiBol" option to design an automated, variable-thickness bolus with user defined
  - Target structure(s)
  - External structure
  - Goal buildup (mm)
  - Outer margin (mm)
  - Alignment guides (optional)

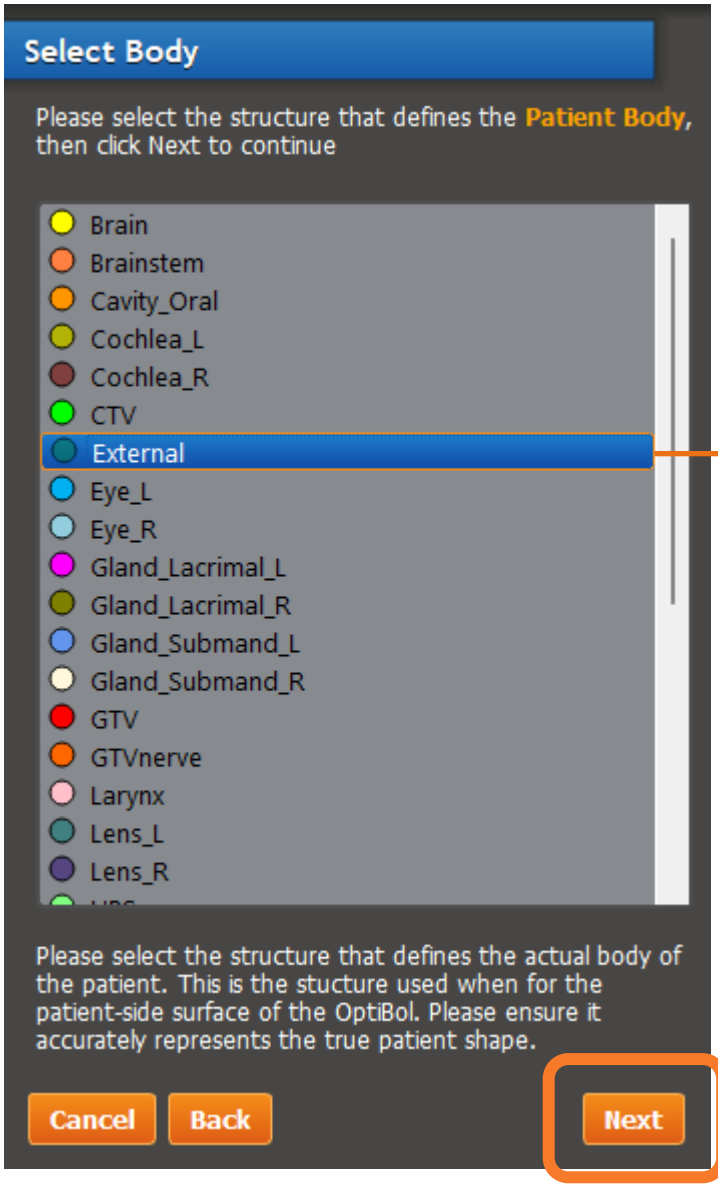
- "Next" to continue

(3.2) CREATE OPTIBOL: SELECT TARGET



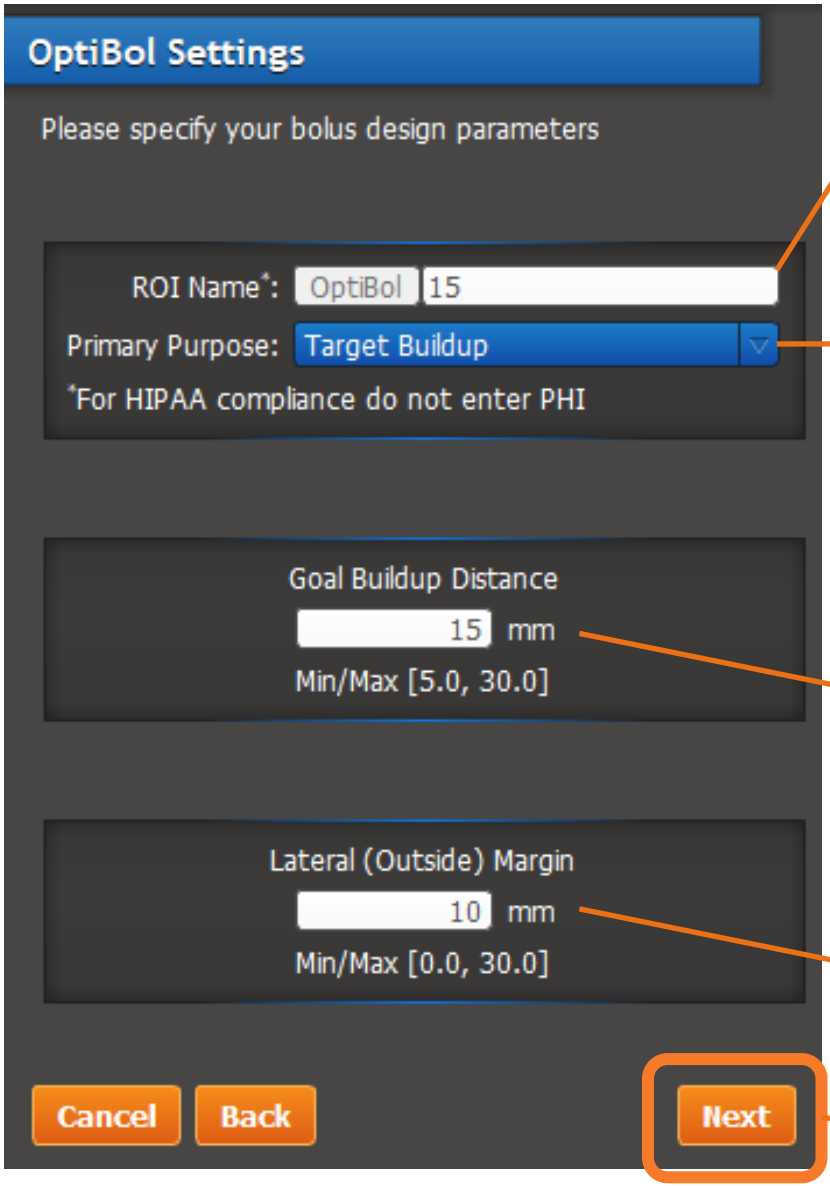
- Select the target structure
- "Next" to continue

(3.3) CREATE OPTIBOL: SELECT BODY (EXTERNAL)



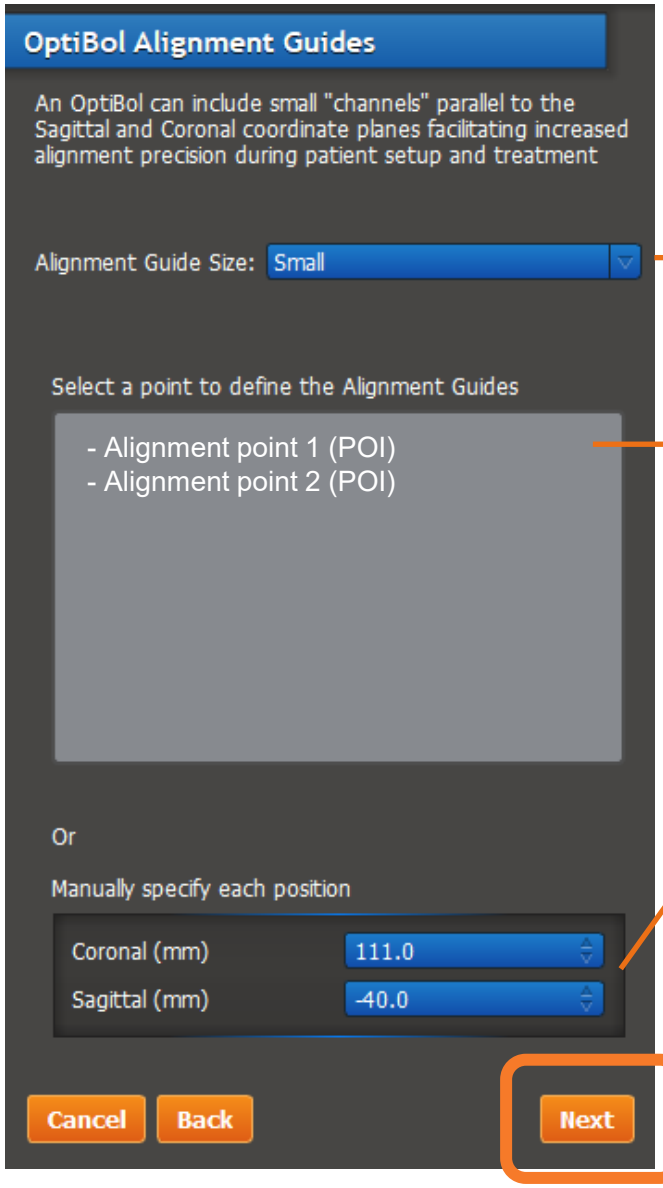
- Select the body (external) structure
- "Next" to continue

(3.4) CREATE OPTIBOL: DESIGN PARAMETERS



- Enter a bolus name suffix (text to appear after "OptiBol" prefix)
- Enter the primary purpose
  - **Target Buildup**. The most common method; this will design a bolus with adequate buildup material added around your target, applicable from any/all potential beam angles
  - **Surface Simplification**. This method will also be target-based; but it will yield a simpler/lower gradient outer bolus surface, e.g., to anonymize sensitive or private anatomical surfaces.
- Enter **the goal dosimetric buildup distance (mm)** to use to design the bolus based on the input target with respect to the external (body) surface
- Enter a **lateral (outside) margin (mm)** to add at the bolus edges; this region will taper to a nominal (3 mm) thickness. *NOTE: This can be set to 0 mm.*
- "Next" to continue

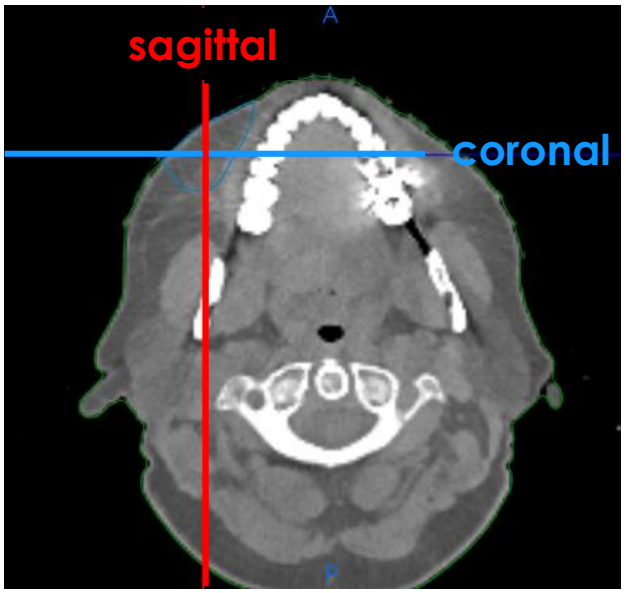
(3.5) CREATE OPTIBOL: ALIGNMENT GUIDES



- Enter an alignment guide size / type
  - **None**. No alignment guides
  - **Small**. ~1 mm radius groove
  - **Medium**. ~1.5 mm radius groove
  - **Large**. ~2 mm radius groove

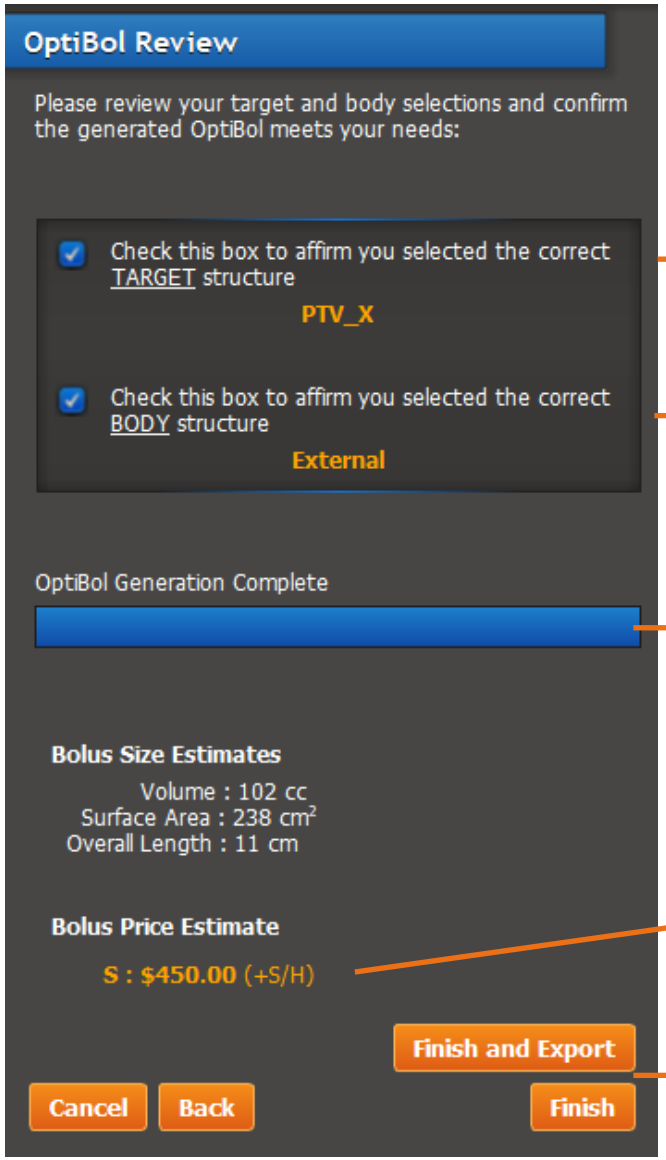
- You can automatically register the coronal and sagittal alignment planes to intersect with a specified point-of-interest (POI) defined in the RT structure set

- Or you can define the alignment plane positions manually
- Use up/down arrows or type location (mm)
- Review the positions graphically in the planar and 3D views



- "Next" to continue

(3.6) CREATE OPTIBOL: GENERATE DESIGN



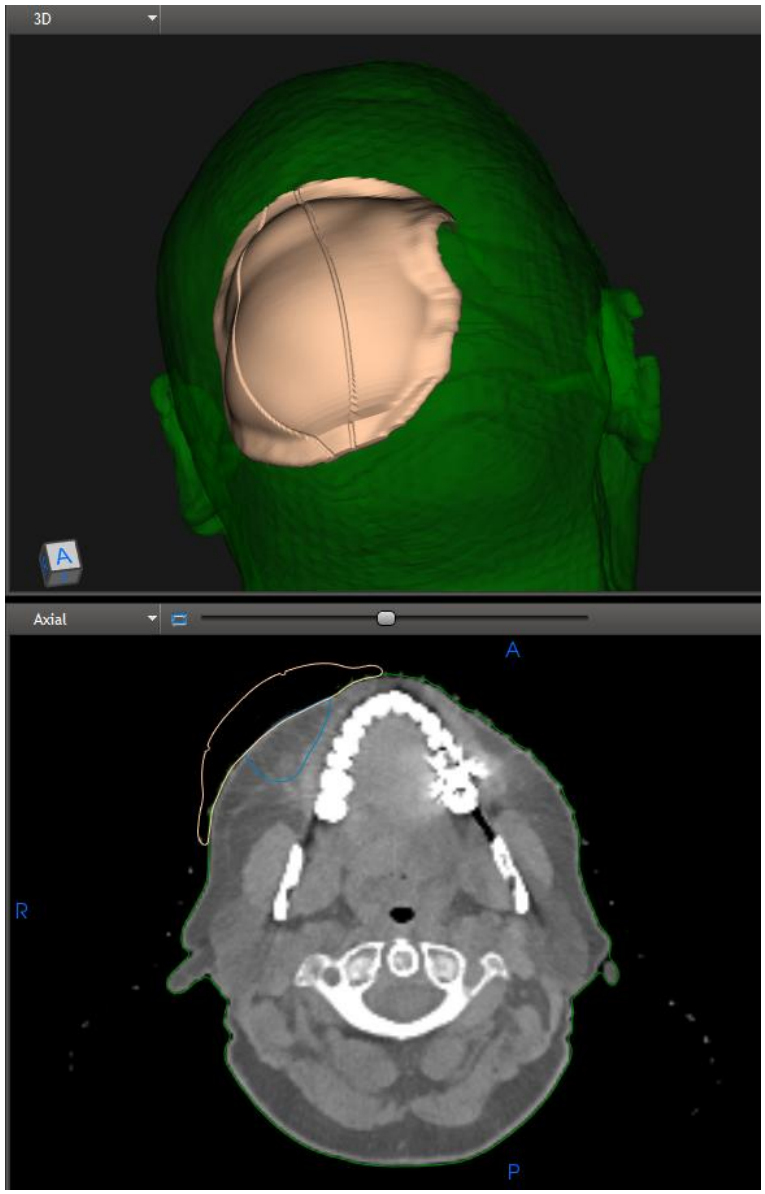
- These check boxes allow you to review the target and body contours that you chose.
- If you see on this screen that you accidentally chose an incorrect ROI, you can cancel the calculation, then easily go back to correct.

- This progress bar will update during OptiBol calculation.
- The OptiBol generation time is very fast and depends largely on the size and shape of the target as well as the complexity of the body contours.
- ***You should expect your bolus design to be calculated in the range of 5 to 30 seconds.***

- The price estimate for the bolus is given at this stage.

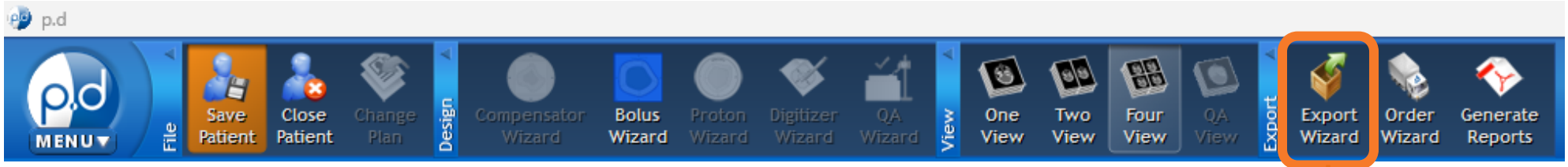
- "Finish" to review/save your progress for "Export" later.
- Or, you can "Finish and Export" to start the export process.

(3.7) CREATE OPTIBOL: REVIEW

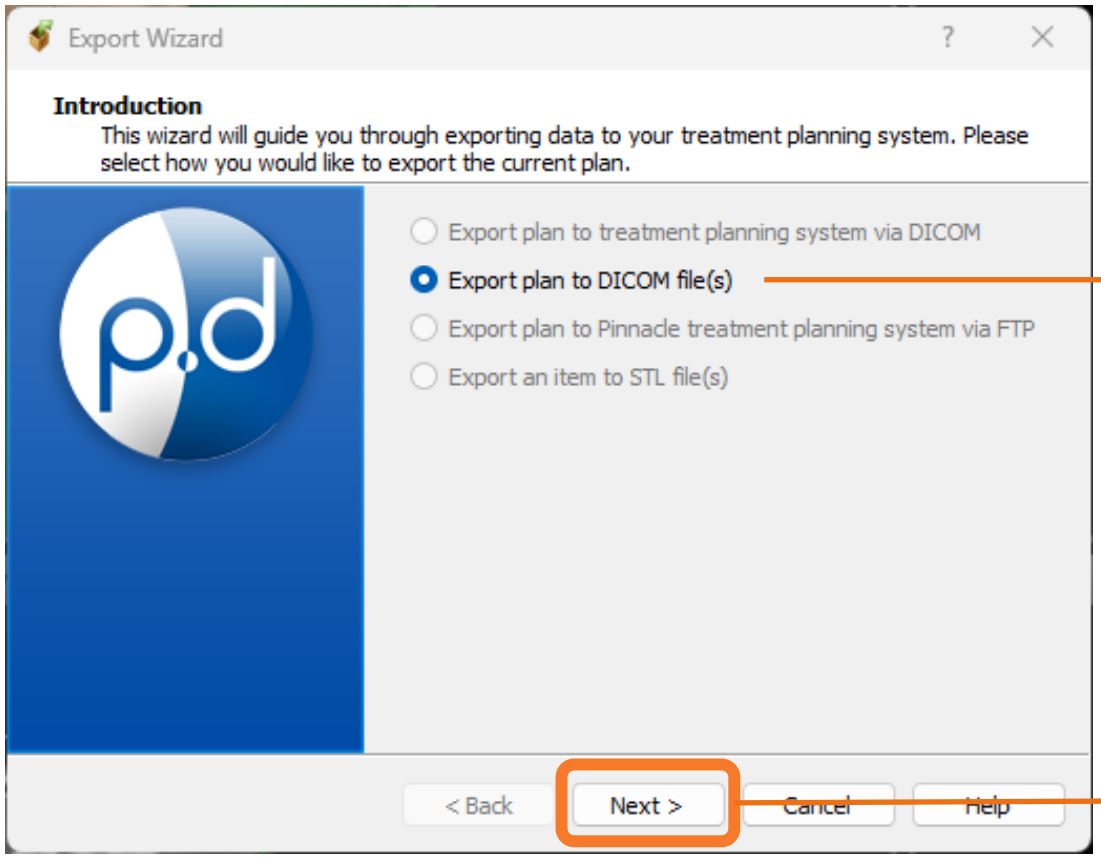


- **View in 3D**
  - Rotate, pan, zoom
  - 3D views are the best way to review alignment guides, if you designed those.
- **View in planar views**
  - Axial
  - Sagittal
  - Coronal
  - Pan, zoom, etc.
- **To create other designs with different design parameters**
  - You can click "Back" in the bolus wizard to replace the design you made,
  - or you can create separate OptiBol designs (e.g., different goal buildup distances) as separate bolus structures by running the bolus wizard multiple times to produce difference bolus structures.

(4.1) EXPORT OPTIBOL DESIGN FOR PLANNING



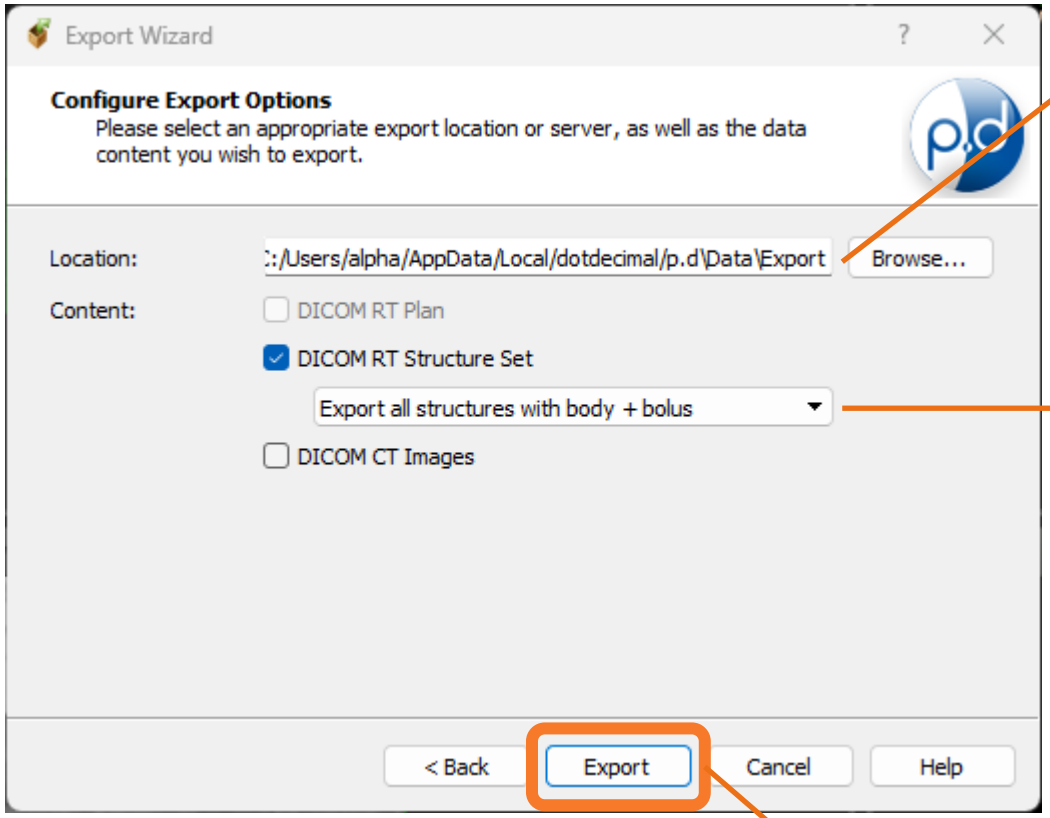
- Select the "Export Wizard"



- Select "Export plan to DICOM file(s)"
  - *Note: Despite the generic nomenclature here, you will not be exporting a plan file, but a DICOM RT Structure Set file*

- "Next" to continue

(4.2) EXPORT OPTIBOL DESIGN FOR PLANNING



- Specify the output (export) directory

- **DICOM RT Structure Set content options**
  - **Export all structures**. The contents will be all the original (imported) structures, plus the new OptiBol bolus structure(s)
  - **Export bolus structures only**. The contents will be the OptiBol bolus structures only, which can be merged into a structure set in the TPS (Note: Depends on TPS make/model and if they have a merge feature)
  - **Export all structures with body + bolus**. This will include all the original structures, the added OptiBol structure(s), plus an additional structure that will be the union of the body ROI and the bolus ROI(s), which will be given a name of default ROI name of "patient" and tagged as the external contour in the DICOM file.

- "Export" to save DICOM RT Structure Set

(5) DESIGN TREATMENT PLAN

Import OptiBol design to your treatment planning system (TPS)

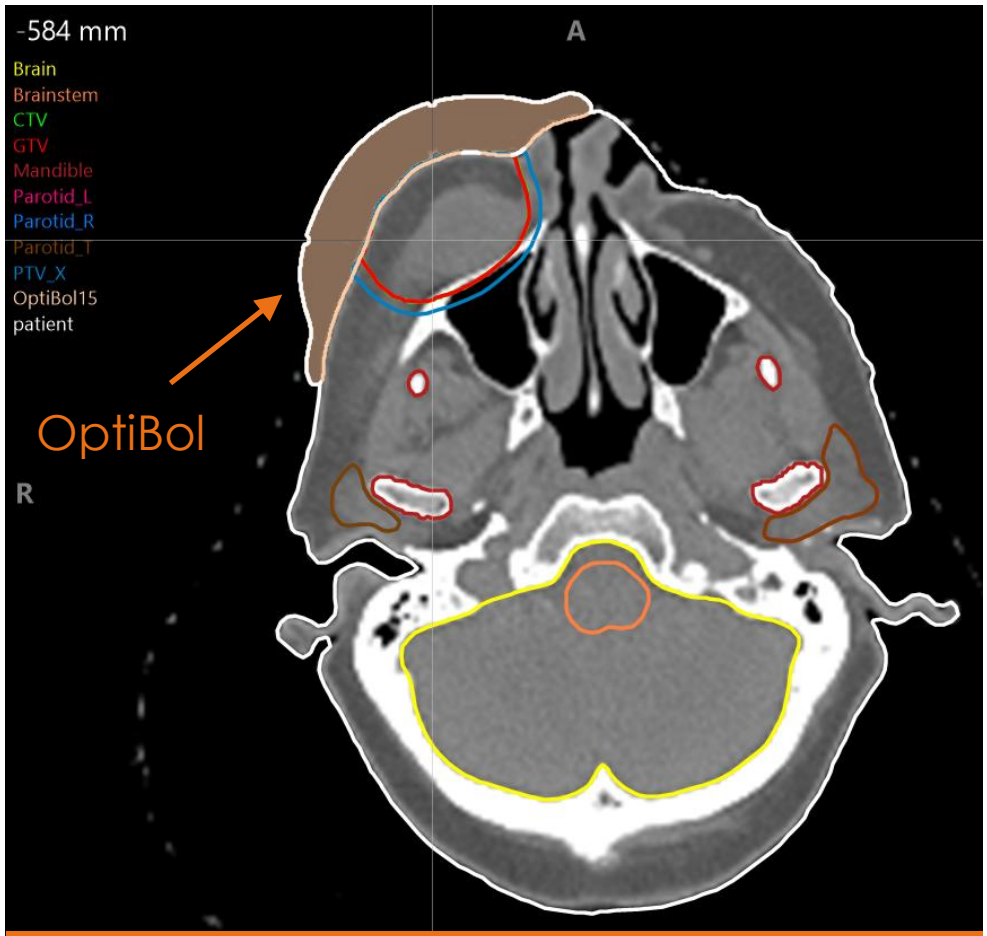
- Transfer your OptiBol design to your TPS by importing the DICOM RT Structure Set that was exported from the P.D software.
- When imported, assign the appropriate electron density (or, depending on the TPS, an equivalent pixel value) to the bolus region-of-interest (ROI). The value should correspond to the FlexiBol silicone material.

Optimize your VMAT (or IMRT, or 3D conformal) plan

- The OptiBol has been designed to provide the user-defined buildup from any potential beam direction (including all gantry and couch angles), so you have full flexibility in beam geometries.

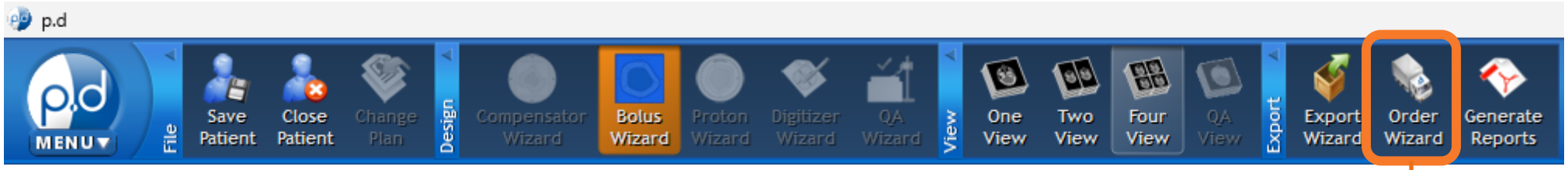
Order your OptiBol

- When you are ready, you can return to p.d to order the OptiBol bolus for manufacturing and delivery.

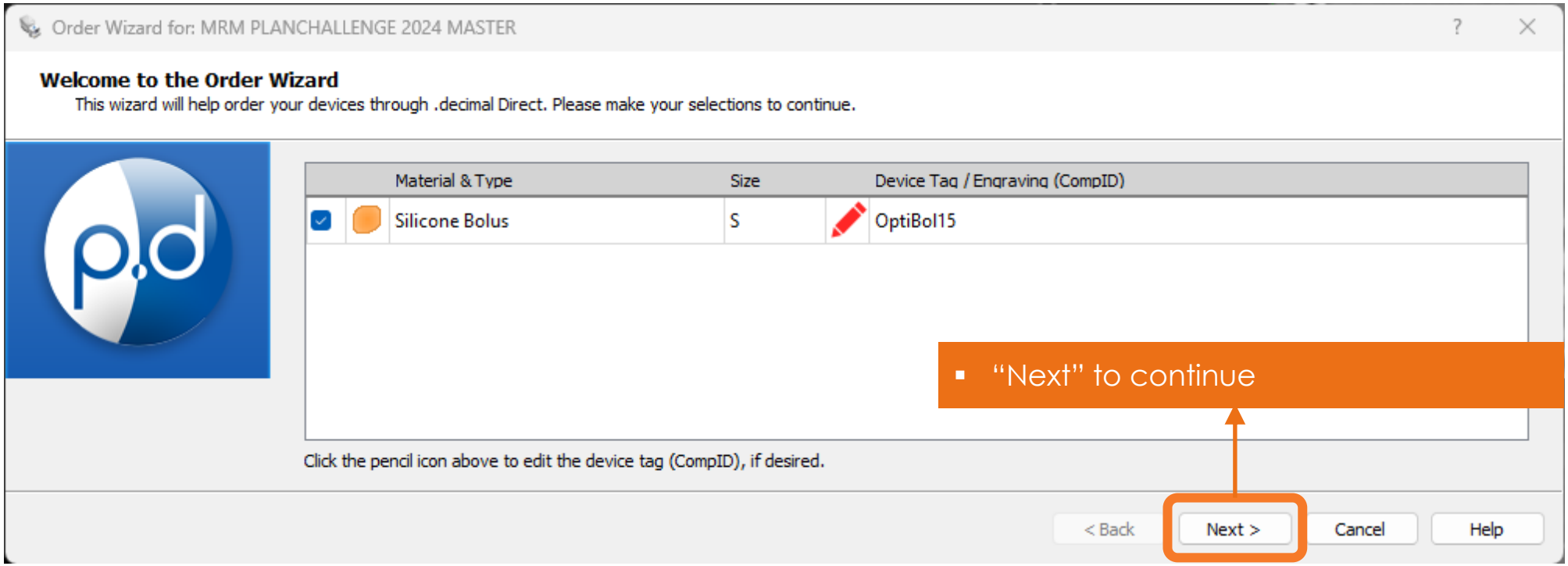


Your OptiBol bolus will be transferred as structure in the RT Structure Set. It will appear as contours in axial slices.

(6.1) ORDER THE BOLUS: ORDER WIZARD

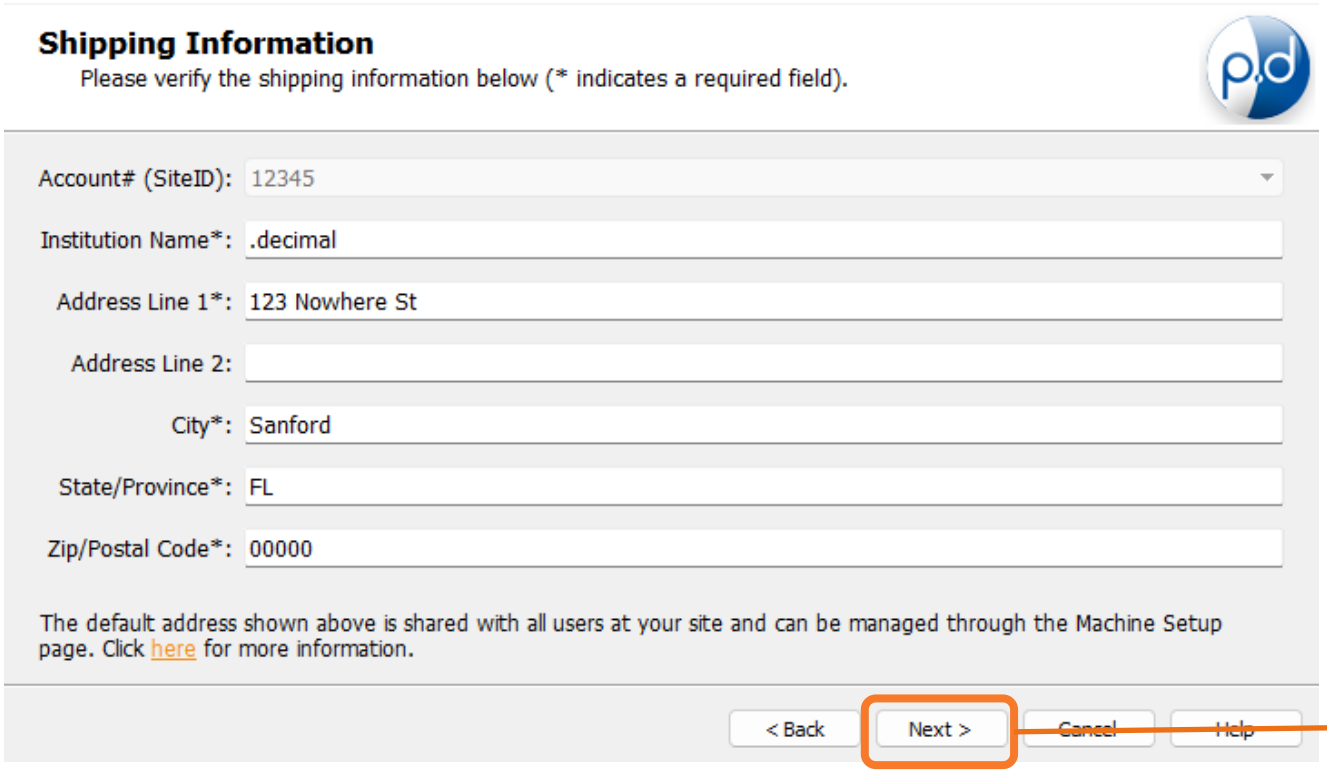


- Select the "Order Wizard"



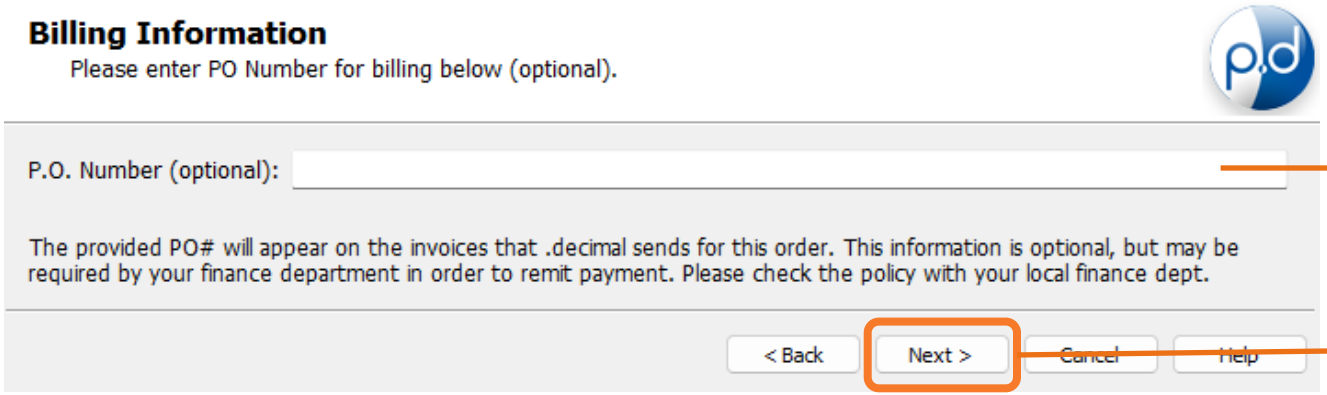
- "Next" to continue

(6.2) ORDER THE BOLUS: SHIPPING AND BILLING



- You will now see the **shipping information screen** where you will fill out and/or verify the address where the device will be shipped.
- Note: See the software **Help Menu** for more information on how to set shipping addresses.

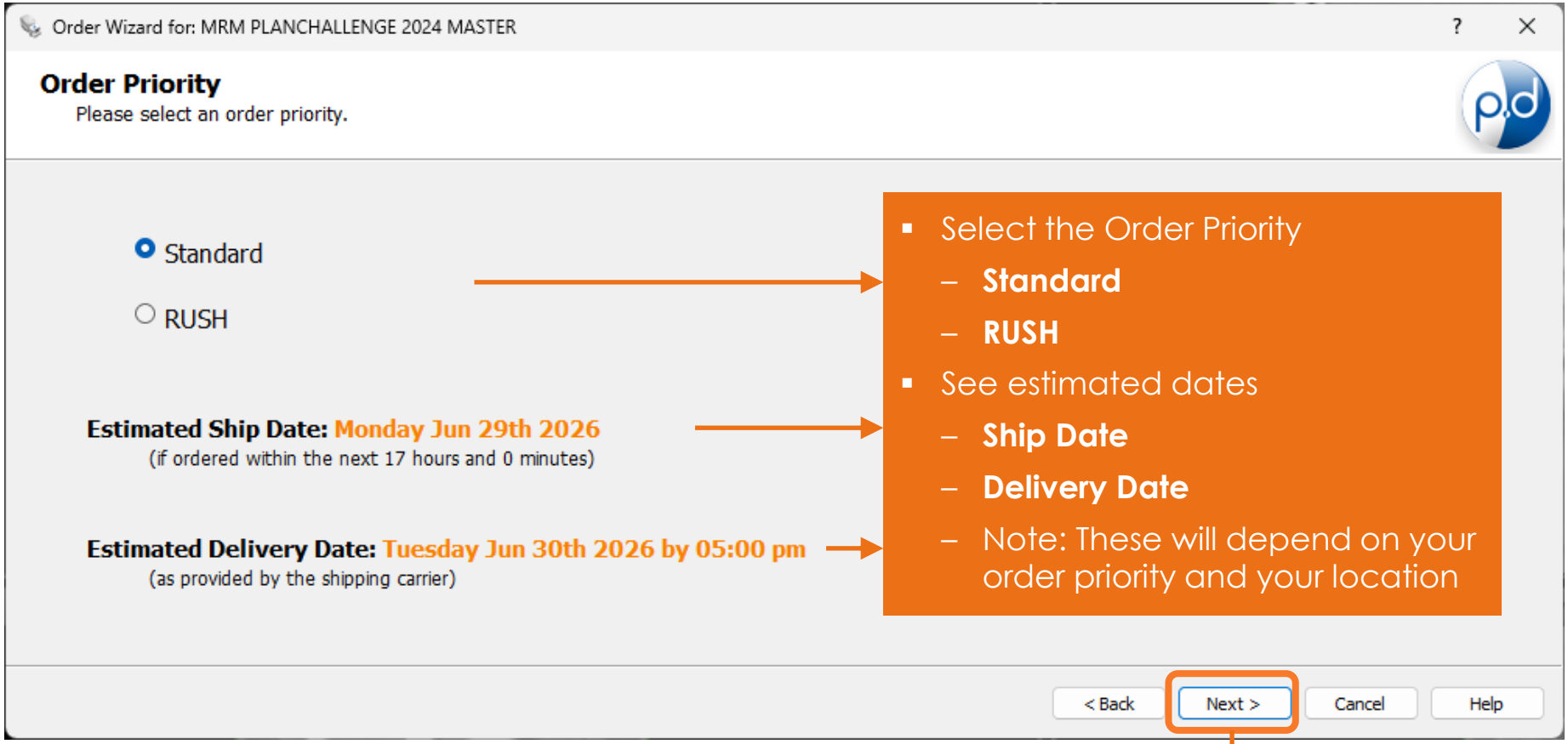
- "Next" to continue



- Enter P.O. Number (optional)

- "Next" to continue

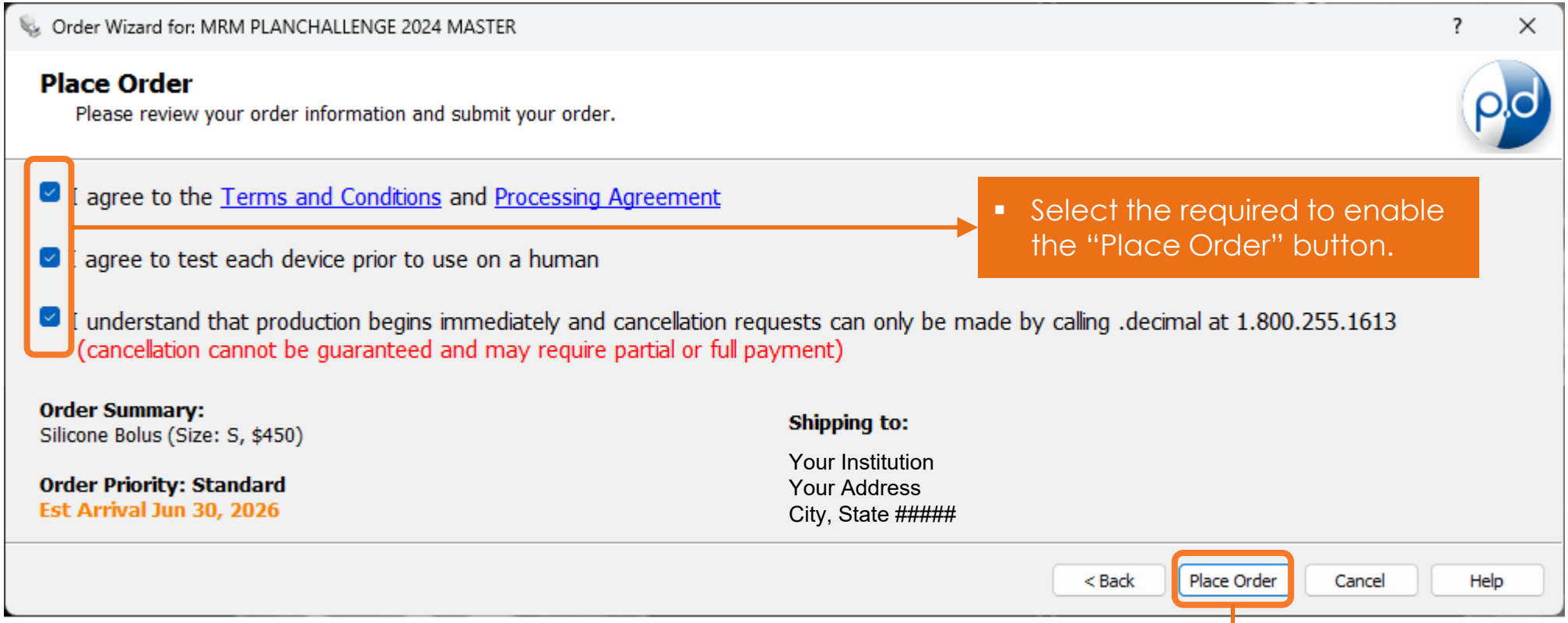
(6.3) ORDER THE BOLUS: ORDER PRIORITY



- Select the Order Priority
  - **Standard**
  - **RUSH**
- See estimated dates
  - **Ship Date**
  - **Delivery Date**
  - Note: These will depend on your order priority and your location

- "Next" to continue

(6.4) ORDER THE BOLUS: PLACE ORDER



- Select the required to enable the "Place Order" button.

- "Place Order" to finalize order