

Please read through the Bolus Starter Guide prior to planning, as this will help ensure the best bolus possible. This walkthrough is meant to be a quick start to help the user immediately begin using the BolusECT (Optimized Thickness Bolus) module of p.d. For a detailed explanation of how each parameter works, please see the Help Menu within p.d.

In the TPS, contour the external and PTV along with any OAR's.

Put on an electron beam at 105 SSD, or greater, at the desired treatment angle.

Note: The electron energy does not need to be decided on at this point. The beam should be en face to the area to be treated. (i.e. If the area to be treated is the bridge of the nose, you may want to consider kicking the table 90° and angle the gantry back towards the head.)

Design the electron cutout. It is best to have at least a 1cm expansion around the area to be treated.

Export the CT data set, the structure set and the plan to a folder on a network drive that is easily accessed. (p.d does not require the plan to be calculated to accept it. However, some TPS will not export a plan without calculating).

Previously exported files (CT, RS, RP) should be seen in the folder on the network drive.

Open p.d and sign in with the user name and password provided by .decimal.

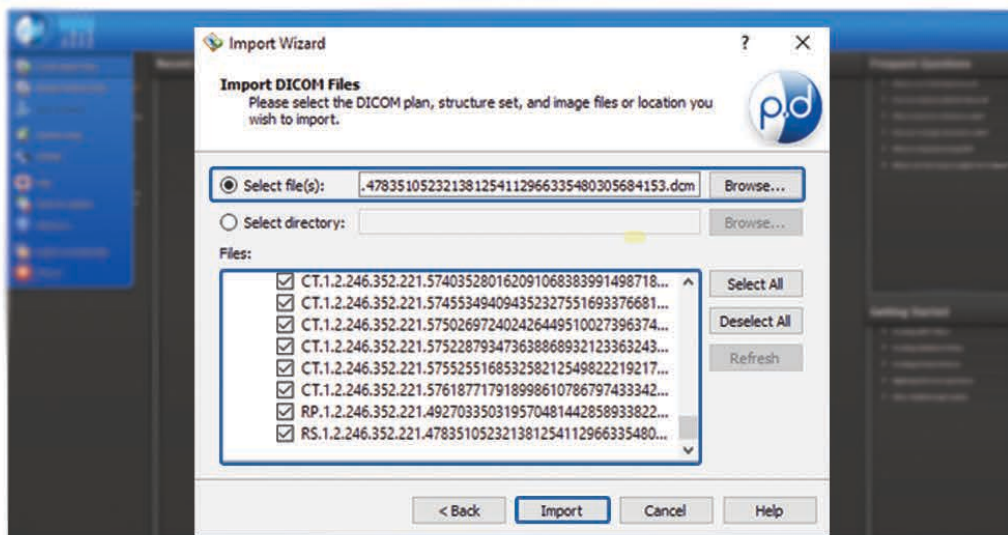
Click the p.d icon in the left-hand corner and choose “Create/Import Plan” from the dropdown menu.

Choose “Import Plan from DICOM file(s)”.



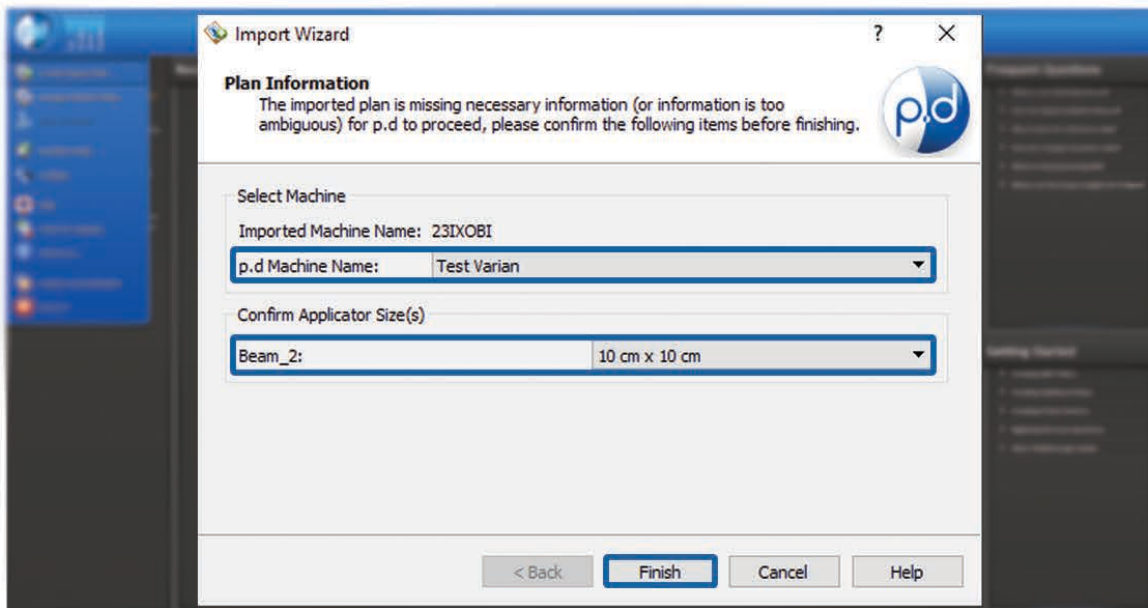
Navigate/Browse to the network drive folder where you put the DICOM files.

Select all the DICOM files. They should all have .dcm as the extension.



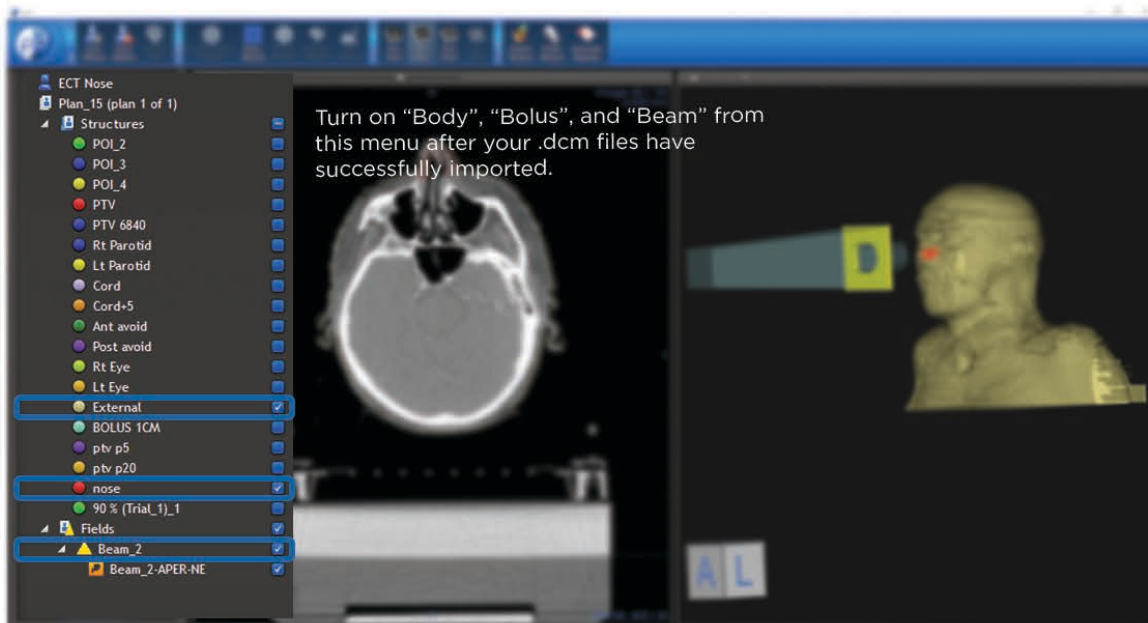
Import the files.

Select the machine name and cone size from the dropdown menu.

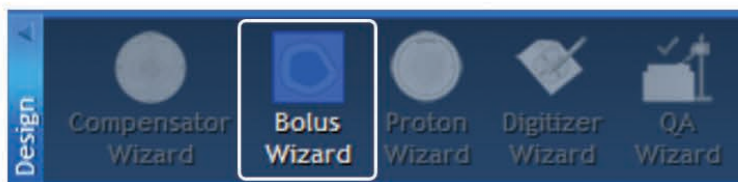


Click “Finish”.

Turn on “Body”, “Tumor Volume”, and “Beam” from the right-hand side of the screen.

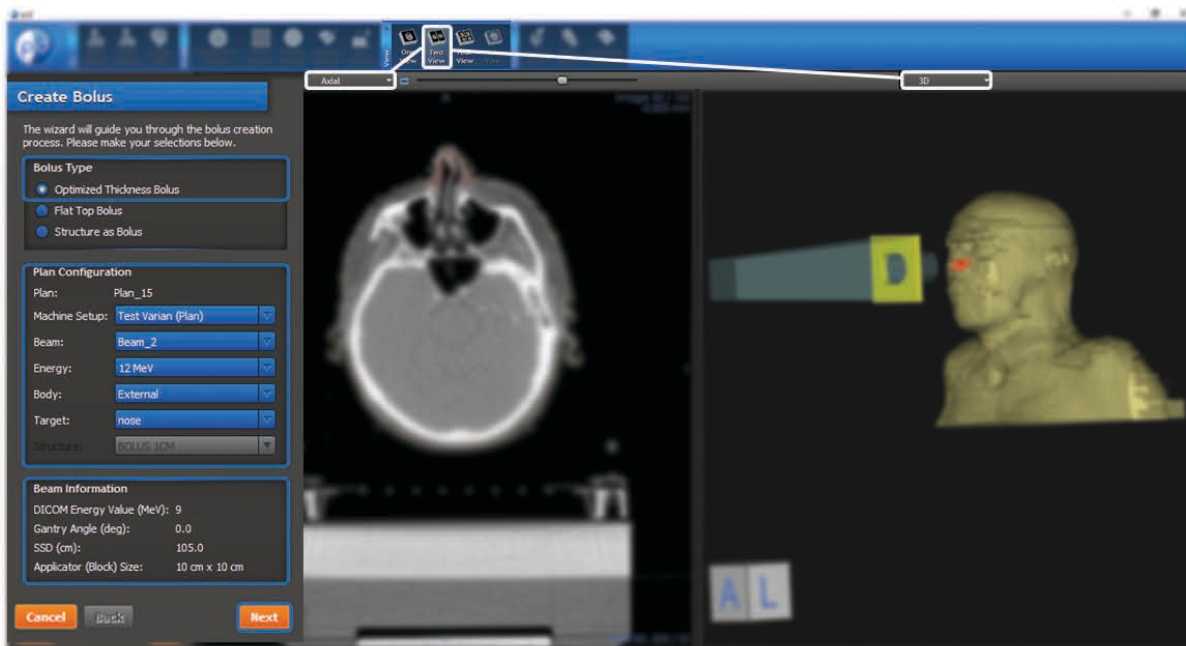


Choose “**Bolus Wizard**” in the *Design* section of the top tool bar.



Tip: When creating your bolus in the Bolus Wizard, the easiest way to design and view your bolus is to utilize the “**Two View**” window option. “**Axial**” view allows you to easily see the PTV & other structures, while “**3D**” view allows you to see the bolus in real time. (See the white highlights below.)

In *Bolus Type* choose “**Optimized Thickness Bolus**”.



In the *Plan Configuration* box, ensure that the correct Machine name, Beam, Energy (this can be changed later), Body and Target are correct. If any need to be changed, choose the correct option from the dropdown.

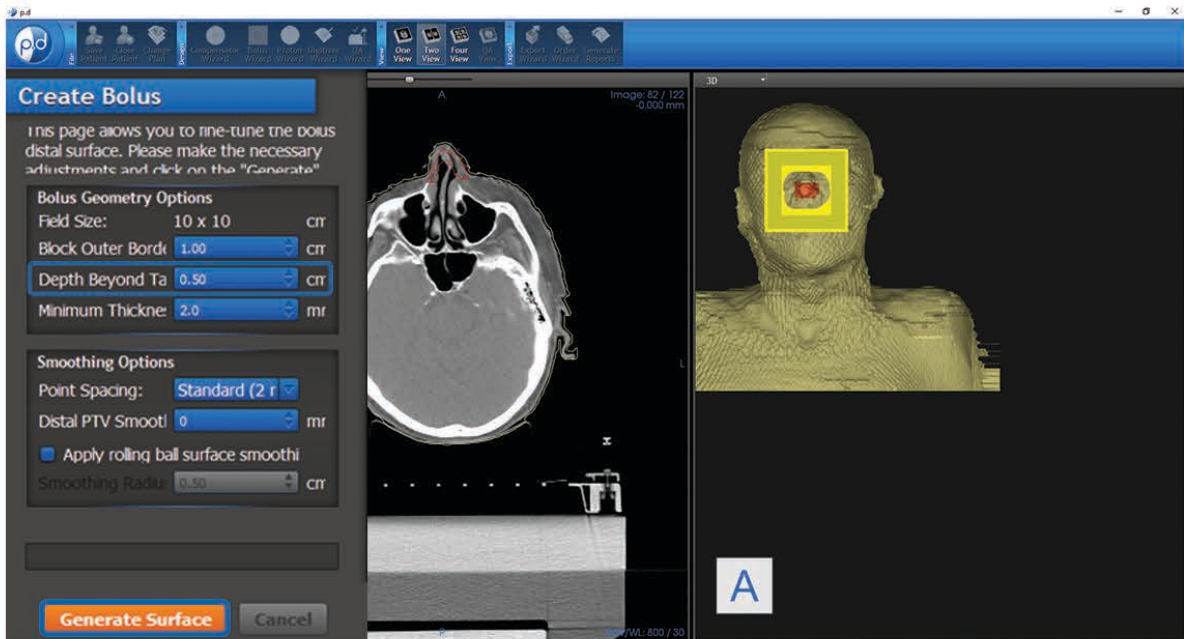
The *Beam Information* box will contain the plan information that was sent over in the DICOM plan. Nothing may be changed in this box.

Choose “**Next**”.

The next page will allow you to create the distal (patient) side of the bolus.

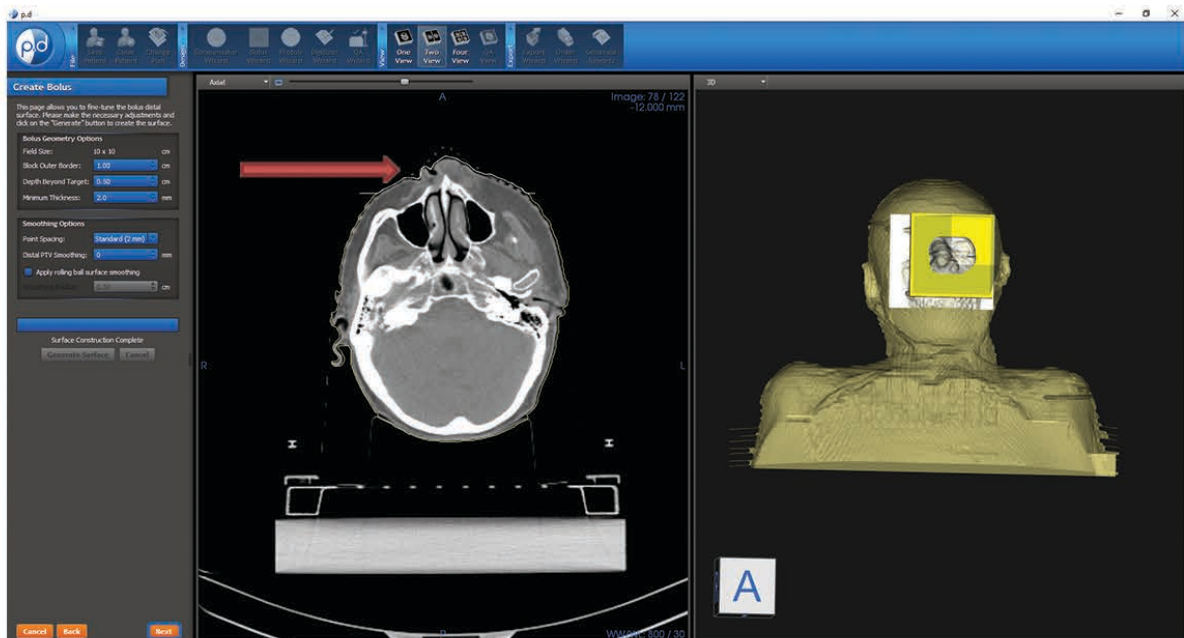
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For the first pass, you may leave all of the settings on the default if desired. The only one that may need to be changed is “Depth Beyond Target” in the **Bolus Geometry Settings** box. This may need to be increased in the case of sloping body part, such as a nose, to allow the bolus to sit on the patient’s face.



Select the “Generate Surface” button.

The patient side of the bolus should be rendered on the surface of the patient.

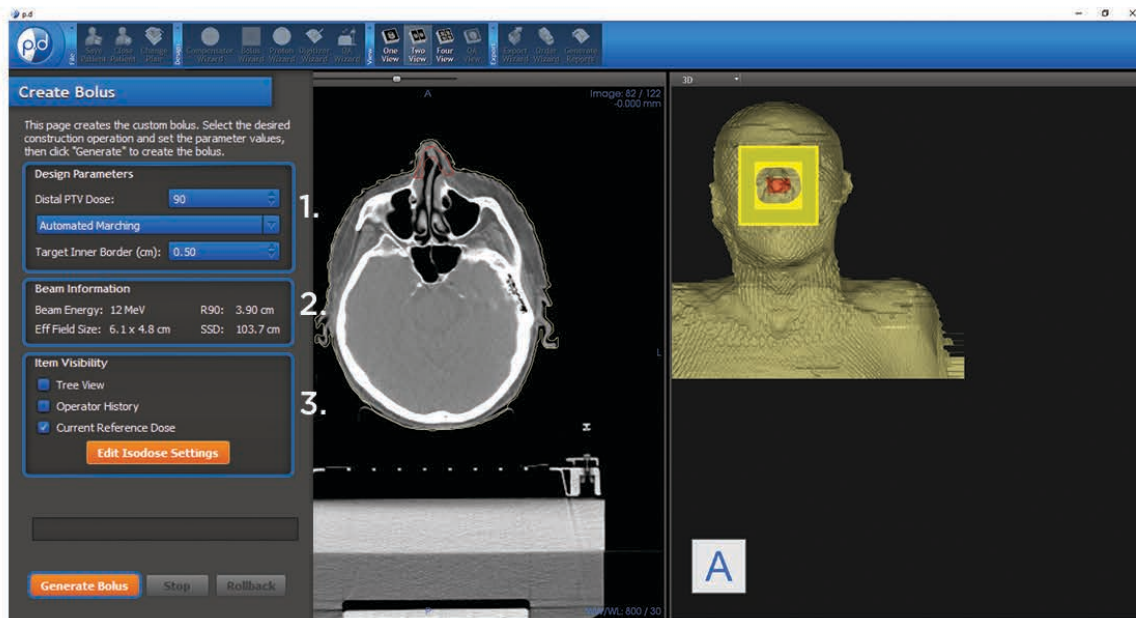


Click the “Next” button to design the proximal (beam) side of the bolus.

On this page, it is best to start out using the defaults and then move to adjusting after the bolus is designed. There will be three boxes displayed.

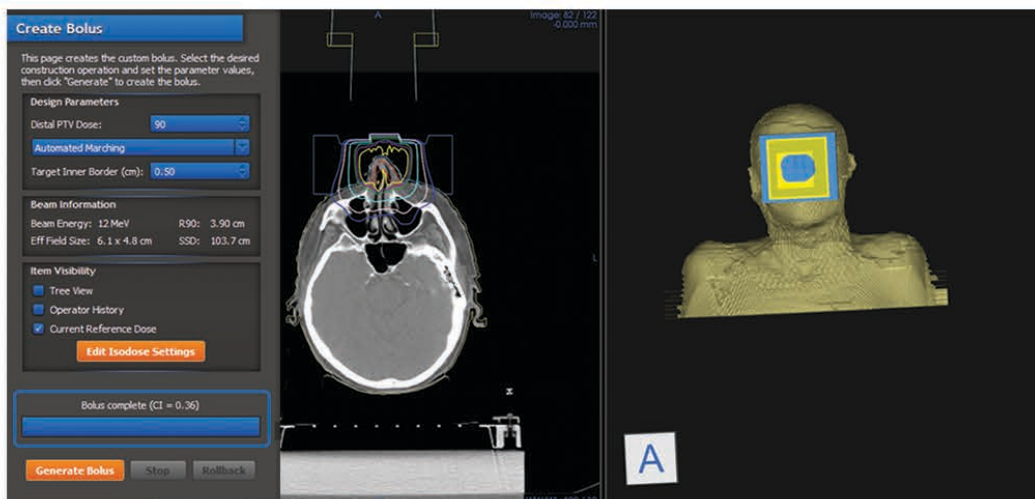
1. The first box contains the Design Parameters. “Distal PTV Dose” specifies the isodose line that should conform to the distal edge of the PTV. The next dropdown lists the “Operators” for designing the bolus. A more detailed explanation for each can be found in the Help section. The “Target Inner Border” can be left at the default initially.
2. The second box contains the Beam Information.
3. The third box contains the Item Visibility. The planner may turn these on and off. The “Tree View” contains the structures, The “Operator History” shows the planner how the operators are functioning as the bolus is being made, and the “Current Reference Dose” allows the planner to adjust the isodose lines once they are displayed.

Click the “Generate Bolus” button.



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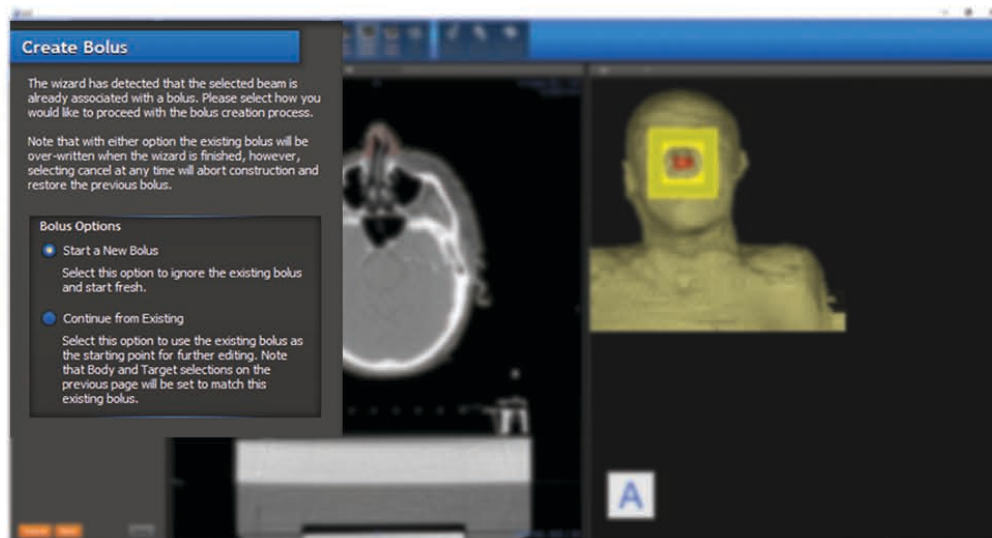
The bolus will start to generate and the progress bar will update along the way. The bolus and isodose lines will start to appear as it marches through the design process.



The status bar will display “Bolus complete” once the process has finished.

At this time, the planner may make adjustments to the beam side of the bolus, if desired. If a different energy is needed, click the “Finish” button and re-open the **Bolus Wizard**. Go to the **Plan Configuration** to change the plan energy. A box will appear asking if you would like to start a new bolus.

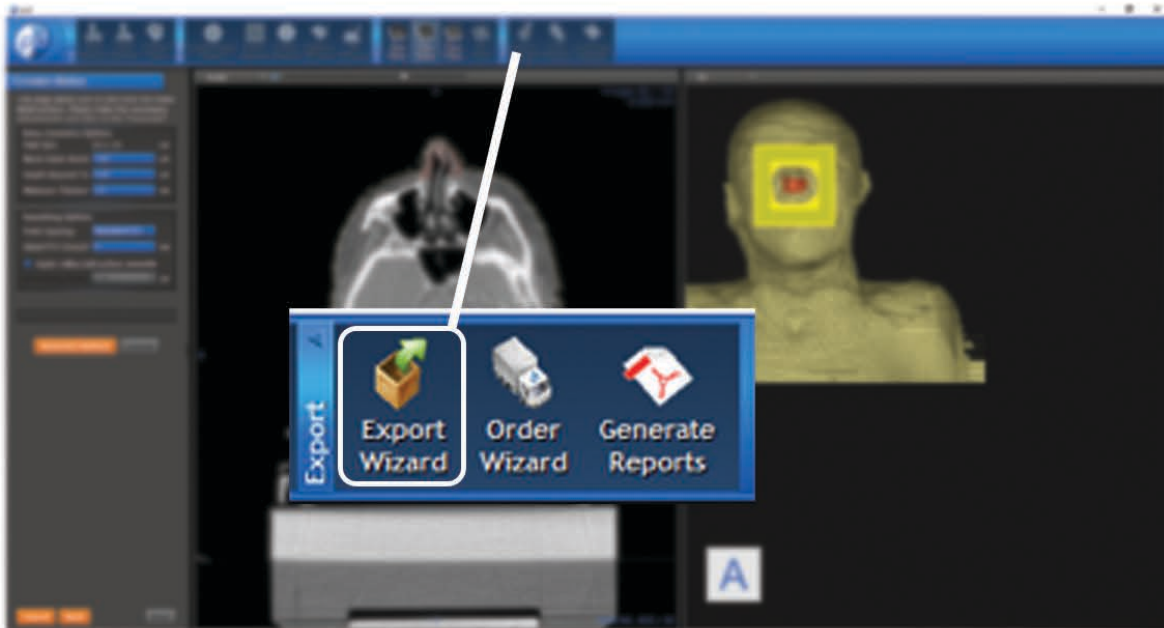
Choose the “Start a New Bolus” option.



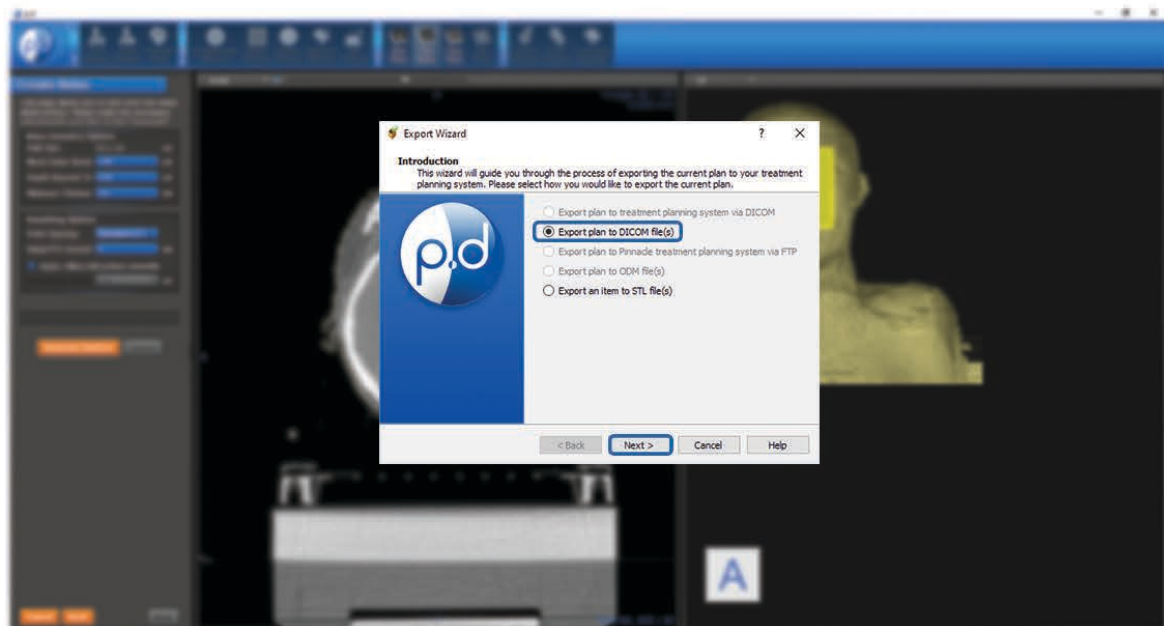
If there are no changes to be made, click “Finish”.

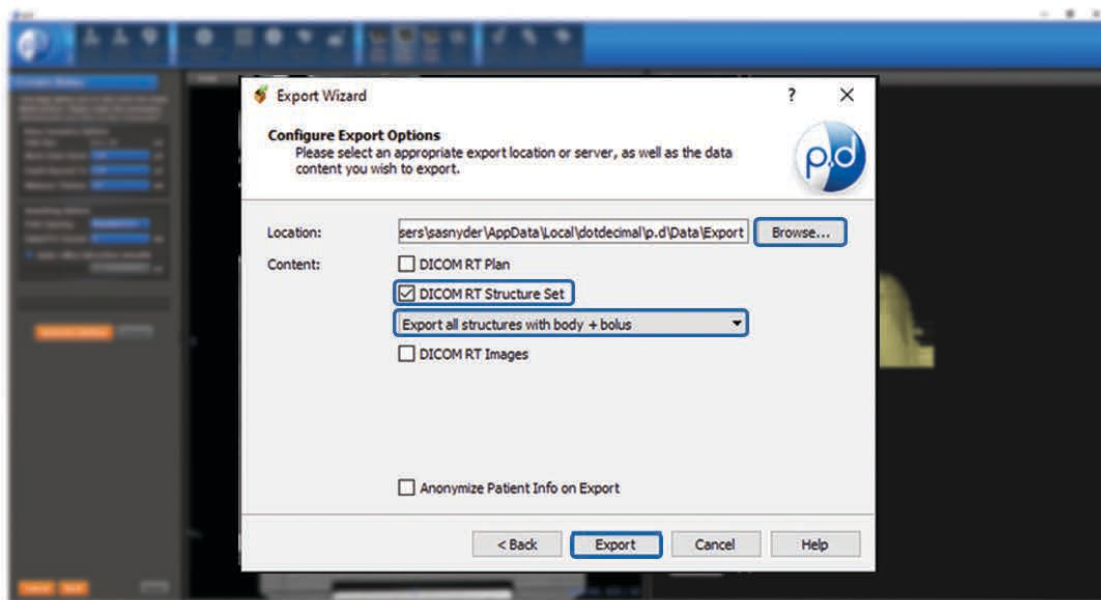
The planner will then need to save the created bolus and export it back to the TPS for calculation and approval by the physician.

To export the plan to the TPS, choose the “**Export Wizard**” from the *Export* block in the tool bar.



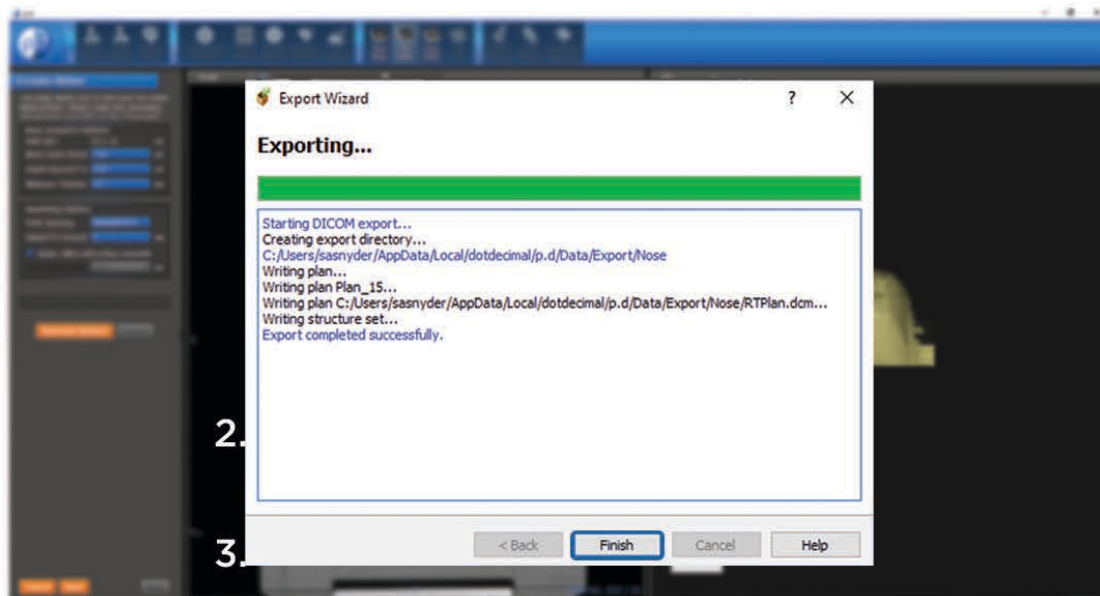
Choose “Export Plan to DICOM Files” and then click the “Next” button.





Browse to the location where you want to export the file. Only have DICOM RT Structure Set selected for export. In the dropdown select “Export all structures with body + bolus”.

Then choose the “Export” button.



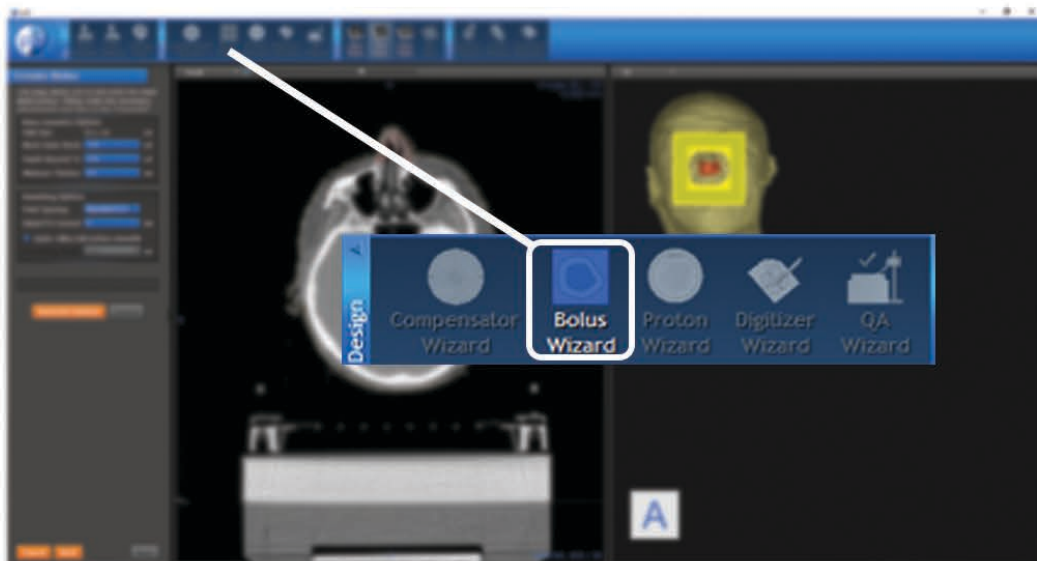
When the exporting process is done, click “Finish”.

At this point the user will need to import the bolus into the TPS. The **Bolus Starter Guide** outlines the parameters for overriding the density of the bolus structure. There will also be a new external that encompasses the bolus created in p.d. The new structure set, brought over from p.d, should be applied to the original plan for calculation & approval. Modifications can now be made to the bolus as it is a DICOM structure.

If any physician approved adjustments have been made to the new plan, send the CT data set, RT SS and RT Plan back to the network folder. (It is advised that the user clear out the original information or create a new folder). If NO adjustments were made, the original bolus made in p.d may be ordered. (Proceed to the ordering process)

Import this new plan back into p.d as before. The bolus will now be labeled as Electron Bolus.

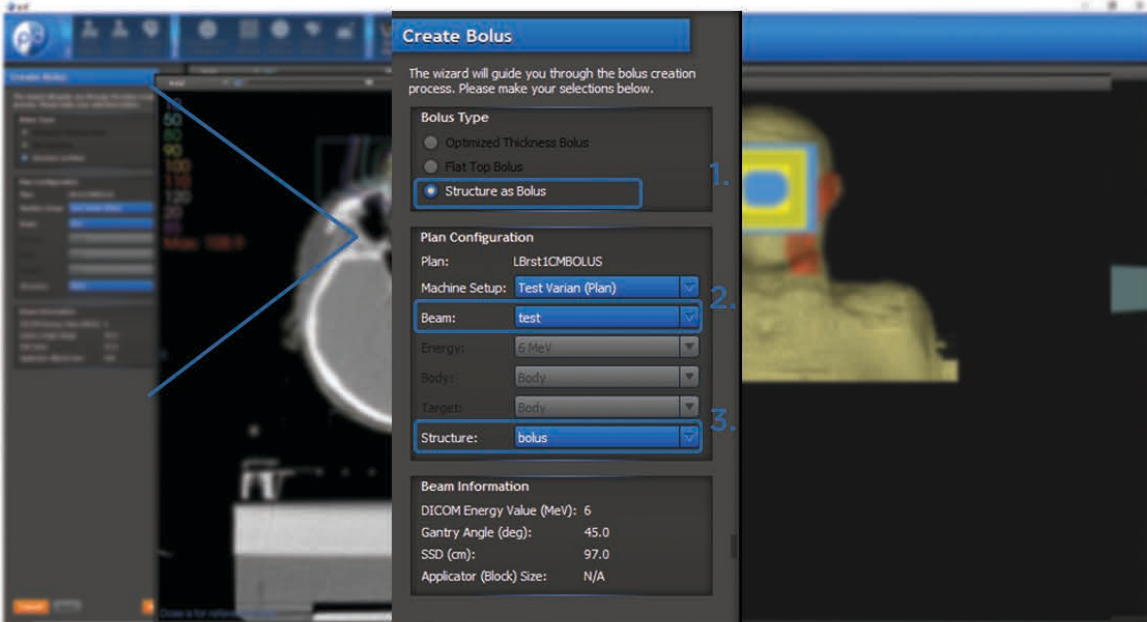
Proceed to **Bolus Wizard**.



This time, choose “Structure As Bolus” in ***Bolus Type***.

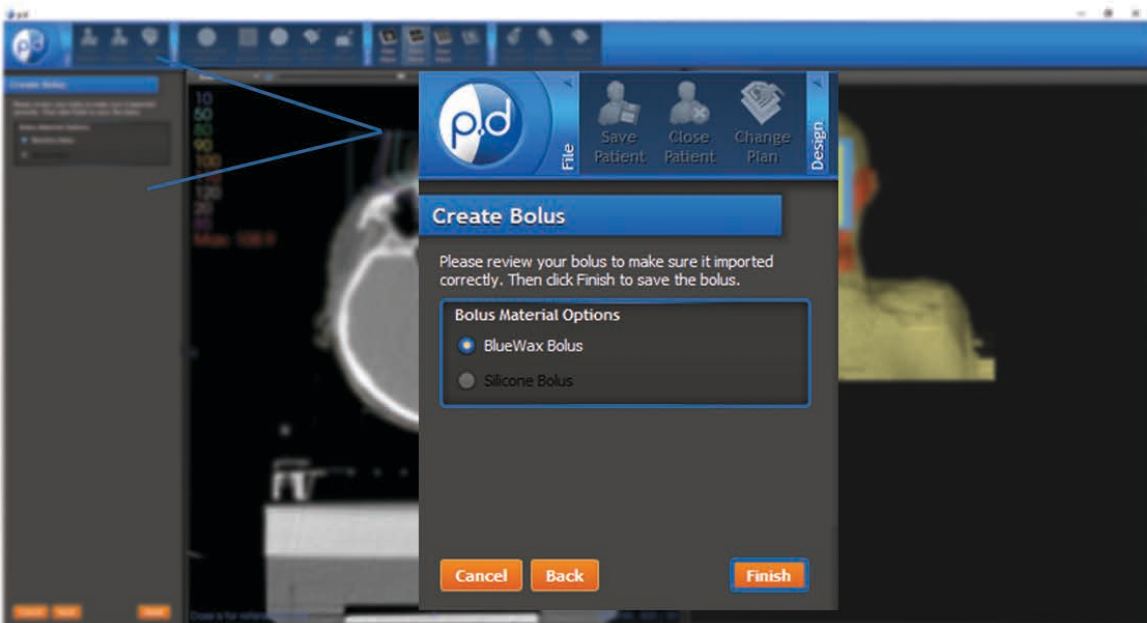
In ***Plan Configuration***, choose the beam.

Then, choose the structure you want to be manufactured.

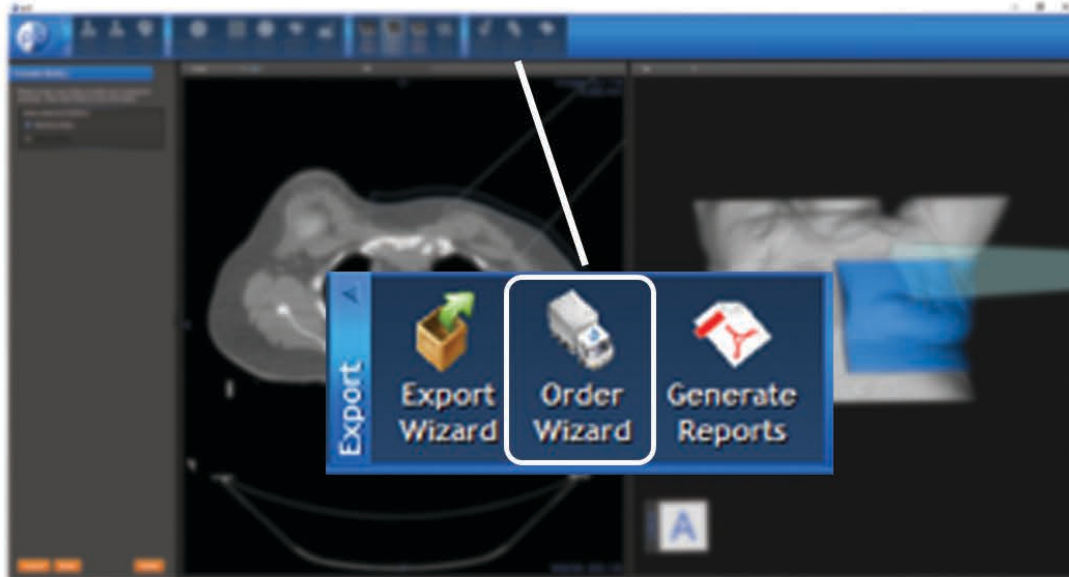


Click “Next”.

Choose the material of your bolus in the “***Bolus Material Options***” menu and click “Finish”.



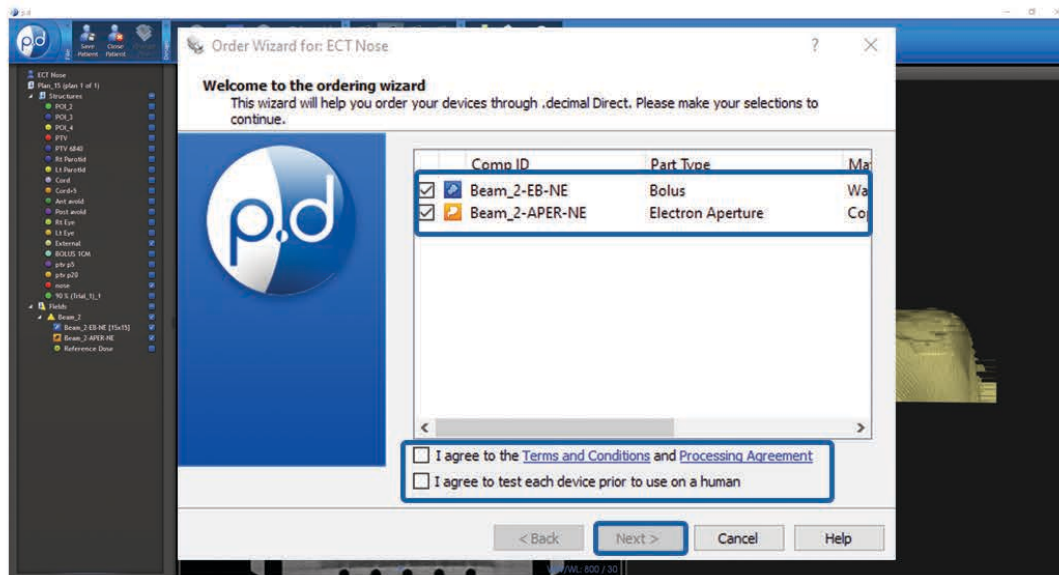
Proceed with the “**Order Wizard**” in the **Export** section of the tool bar.



First, check the box next to the device(s).

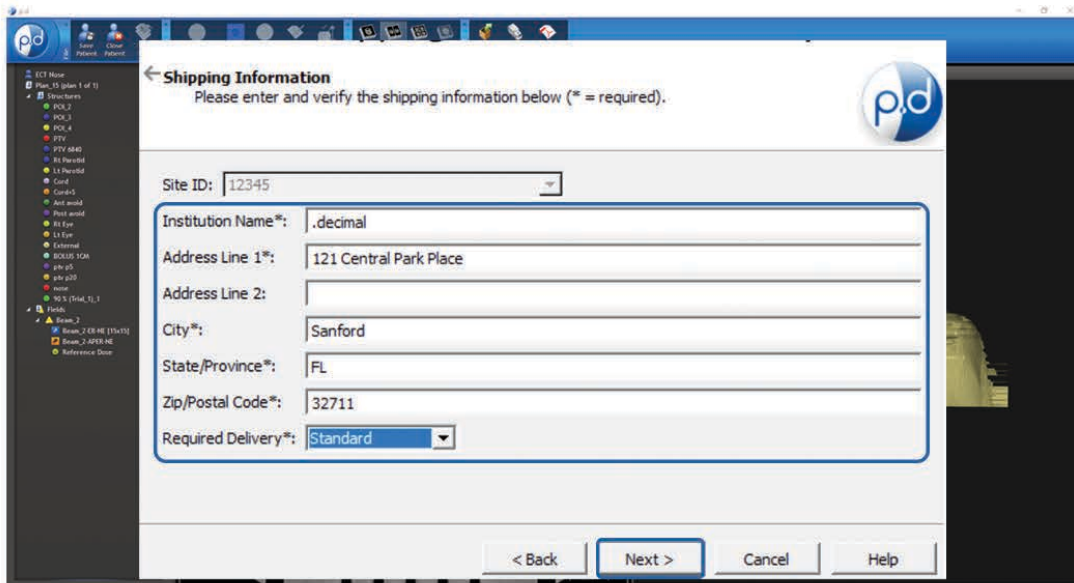
Secondly, agree to the **Terms and Conditions & Processing Agreement**, and agree to test the device prior to use on a human.

Finally, click the “Next” button.



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This brings up the shipping information screen. Here you will fill out the address to where you want the devices shipped. If your address auto-populates, simply move on to selecting your delivery option. Next, click the drop down next to the “Required Delivery” box. This is where you can select the desired delivery option. We have “Standard” or “Rush” delivery options. There is an expedite fee for the “Rush” shipping option. It is important to note that the ship-to address is associated with the machine selected, but can be overwritten.

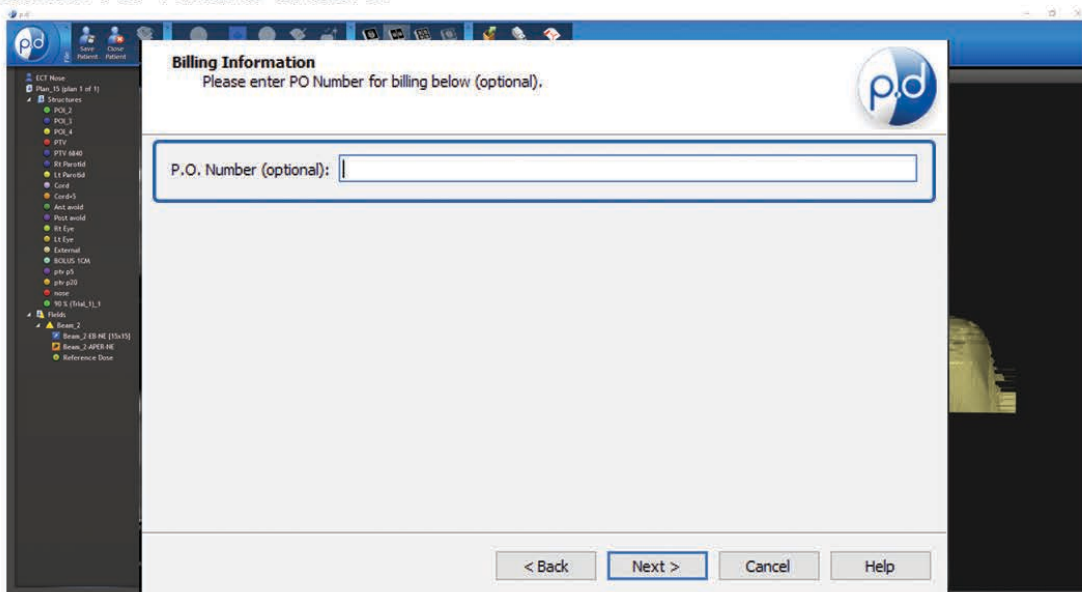


The screenshot shows the "Shipping Information" window. The title bar reads "Shipping Information" and the subtitle says "Please enter and verify the shipping information below (* = required)". The form contains the following fields:

- Site ID: 12345
- Institution Name*: .decimal
- Address Line 1*: 121 Central Park Place
- Address Line 2: (empty)
- City*: Sanford
- State/Province*: FL
- Zip/Postal Code*: 32711
- Required Delivery*: Standard (dropdown menu)

At the bottom of the window are four buttons: "< Back", "Next >", "Cancel", and "Help".

Note: See Help menu for delivery times, rules and explanations on how to save your address for future orders.

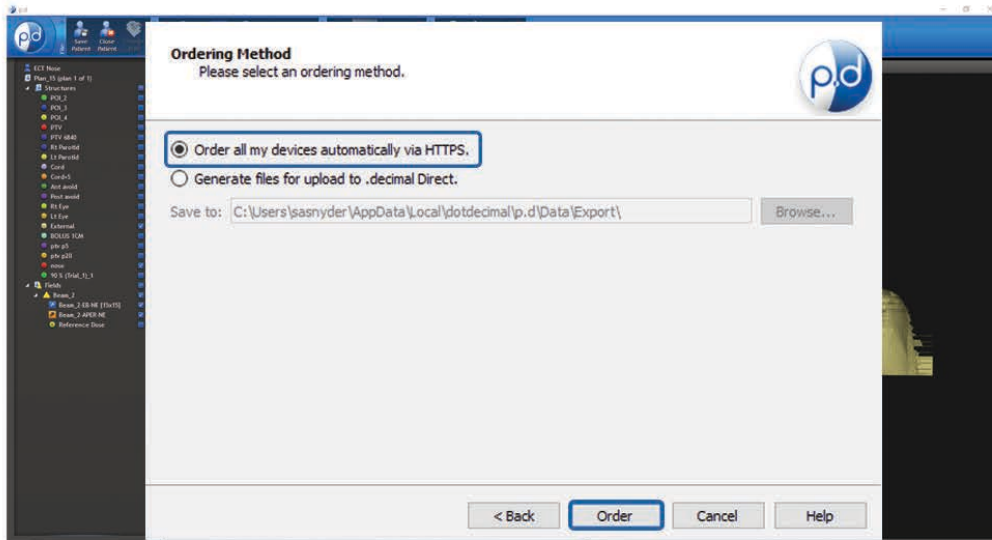


The screenshot shows the "Billing Information" window. The title bar reads "Billing Information" and the subtitle says "Please enter PO Number for billing below (optional)". The form contains the following field:

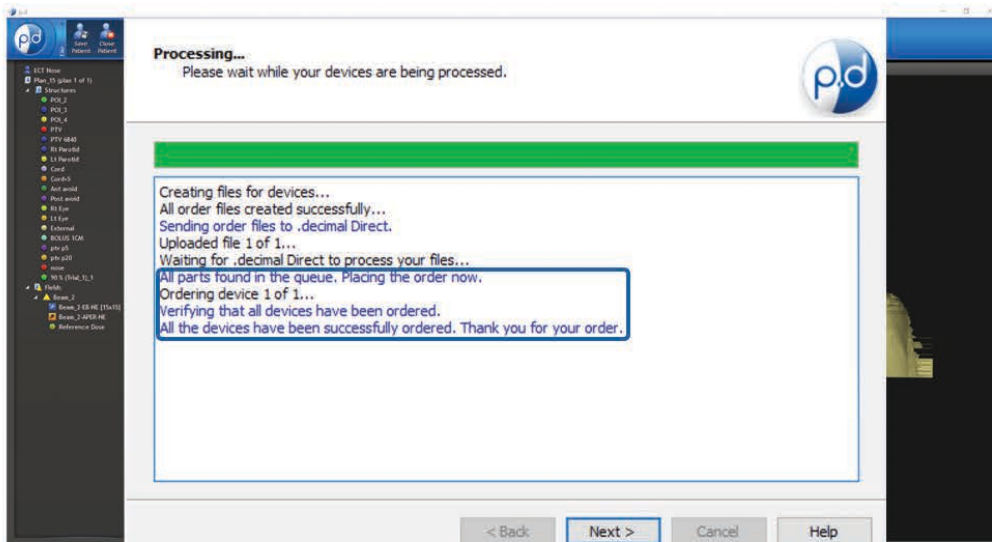
- P.O. Number (optional): (empty text box)

At the bottom of the window are four buttons: "< Back", "Next >", "Cancel", and "Help".

After you have verified the address, selected the shipping priority, & entered a P.O. # if needed, click the “Next” button.



Finally, click the “Order all my devices automatically via HTTPS” if not already selected and click the “Order” button to place the order.



You have successfully ordered from .decimal!

(This concludes the BolusECT Starter Guide walkthrough.)