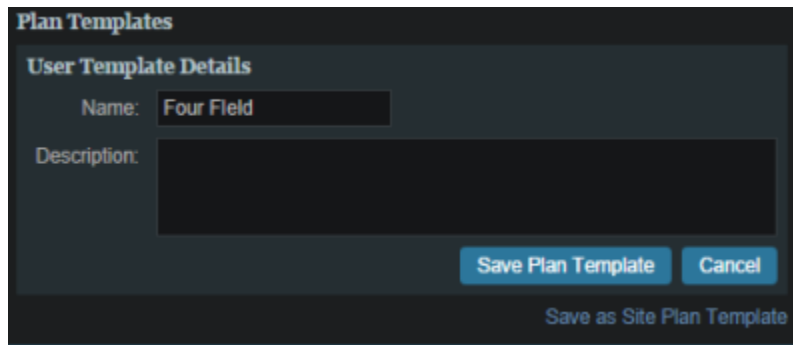# Plan Templates

Plan Templates are a powerful feature of Astroid that can greatly reduce the time spent in creating high quality treatment plans. In a simple sense, a *Plan Template* is just a starting point that can be used when creating new treatment plans for this or other patients. When a *Plan Template* is applied during new plan creation (see here for creating a new plan), all user specified plan parameters from the template are copied into the new plan. In essence you are applying the plan to a new set of images and structures, therefore it is important that structure names and other data are consistent in your *Patient Models* when using *Plan Templates*.

Saving Plan Templates

Plan Templates can be defined globally at the site level for all users at your institution and each user is also free to create their own private list of user level *Plan Templates*. A *Plan Template* can be easily created from any existing plan by opening the General/History block. At the bottom of this block the user may then choose either *Save as User Plan Template* or *Save as Site Plan Template*.

The user then provides name for the Template and fills in any description information as desired.

When saving an existing plan as a template, there are a few rules/tips that should be kept in mind which will help make your templates easier to use in the future:

- In order for templates to work well there needs to be consistency in use of structure names (e.g.- Brainstem consistently labeled Brainstem, not brainstem, Brain stem, brain_stem etc.). Note that proper and consistent use of *Site Structure Templates* is a great way to ensure this is adhered to by all users.
- Most Astroid Plan parameters reference data that will change properly when applied to a new *Patient Model* using a *Plan Template*, however, care should be taken when using *Explicit Points* as these include fixed coordinate values that they may not transfer as desired from plan to plan. avoiding the use of *Explicit Points* is the best practice for *Plan Templates*, but if they must be used be sure to check each explicit point in the new plan after applying a template.
- *Plan Templates* are specific to the *Site Structure Template* used by the *Patient Model*; therefore if a template is created for a prostate patient, for example, that template will not show up for a breast patient due to the *Site Structure Template* selection being different.
- Keep in mind that a *Plan Template* can be created to any level of completion desired within the planning process. For example, a simple template could be created that adds only a few planning structures (e.g. rinds, expansions, etc) or a complex template could be saved that includes all plan data including the full optimization constraints and objectives. Different disease sites may lend themselves to different levels of detail in the *Plan Template* so users are encouraged to explore different options to determine what works best for their clinical workflow.

Using Plan Templates

Plan Templates are applied when creating a new plan:

1. Click on the blue *Add Plan* link under the *Patient Model* to create a new plan
2. From the *Base Plan* drop down menu choose the *Plan Template* that should be used and then click OK
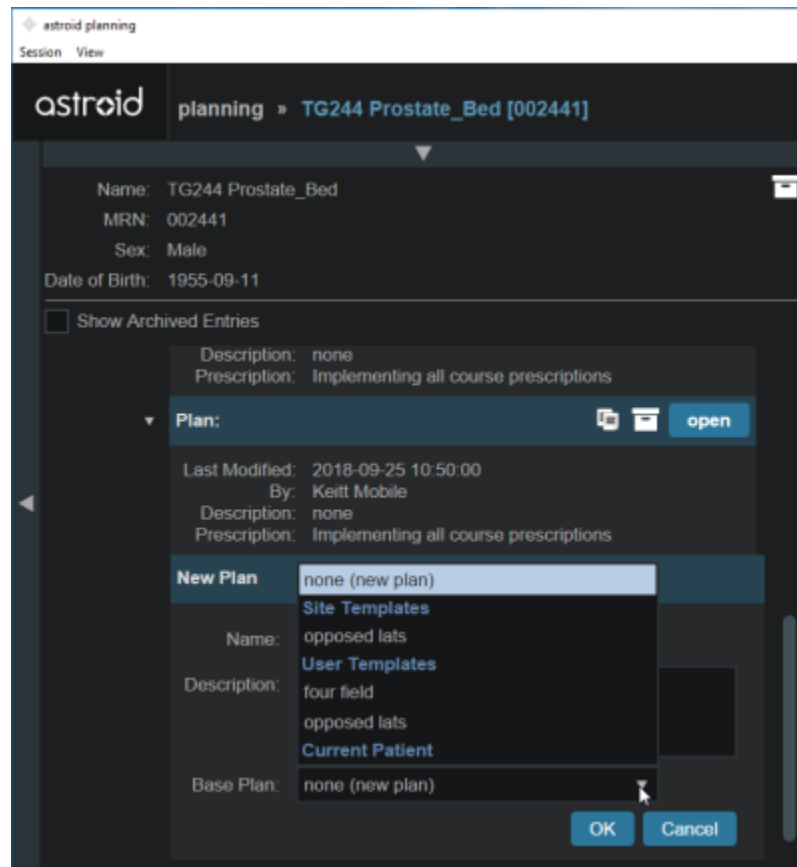
3. Open the new plan and check that all plan parameters have been applied as expected (pay special attention to *explicit points* as described above)
4. Make any changes necessary within plan and then proceed with planning from this starting point
5. If used well, you should be able to review the plan, make a few minor edits, and be at the point of running feasibility & optimization much faster than when starting from scratch

Adaptive Planning

Adaptive Planning is another powerful tool that will enable the user to see what modifications in a plans isodose lines will be made when a patients structure set may have changed- ie. in the case of the patient loosing/gaining weight or the tumor volume may have shrunk. The plan will not be reoptimized; the dose will just be recalculated to adjust for the changes in the structure set. The same patient model will be applied to the new patient data set as the original patient data set so that a direct comparison can be made.

1. Go to the imports and choose the new CT image set of the patient that you are working with and choose the blue *Import into matching Patient* button
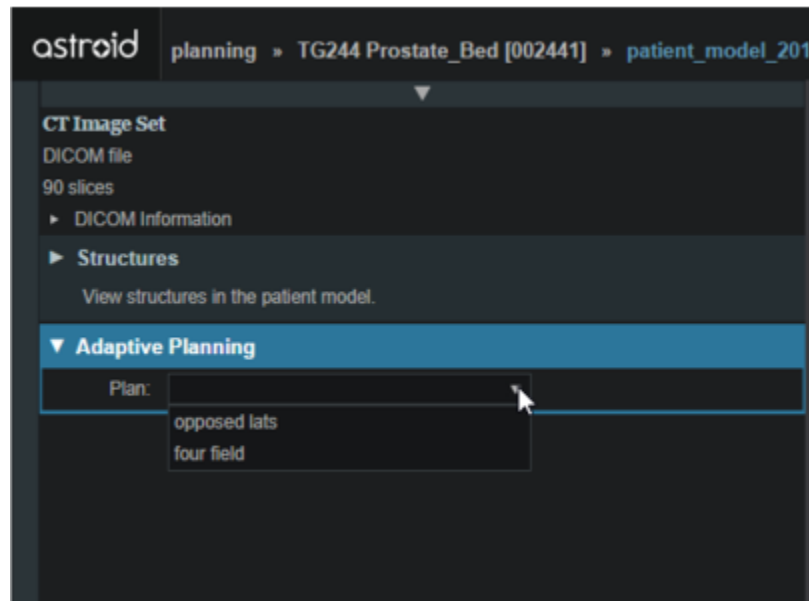2. Adjust your structures to match the existing patient model

3. Choose the orange *Import* button then open the patient
4. Choose the new patient model and open the Adaptive Planning block
5. Choose from the Adaptive Planning drop down which Published plan you would like to use

6. The original plan will recalculate with the new structure set. The isocenter will be place in the same place as it was on the original structure sets The isodose lines will update to reflect the new dose on the new data set