INNOVATIONS AND CHALLENGES: IMPLEMENTING SGRT IN PROTON RADIATION THERAPY

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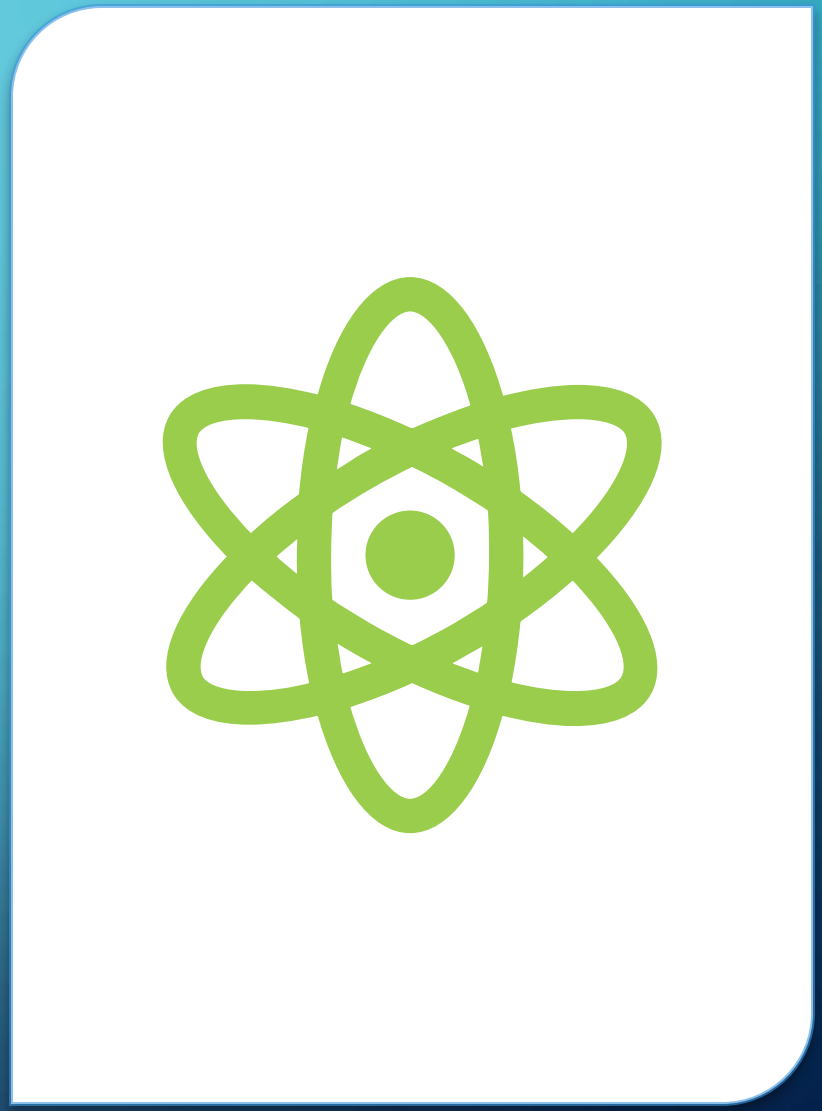


DISCLOSURES

NO DISCLOSERS

AGENDA

- Transitioning from Crad to Align RT
- Designing your proton room
- Treatment sites using AlignRT
- Tattoo-Less Challenges
- Verification Scan Challenges

TRANSITIONED FROM CRAD TO ALIGN RT

Our proton center initially had C Rad for an SGRT system in 1 treatment room, we decided to change to Align RT due to it's ease of use, and this allowed us to have one vendor department wide since the Photon side already had Align RT.

With having the background in C Rad this did help the team to be more receptive to learning another new product knowing that it would be an improvement.

We started with Prostates, Breasts, and CSI cases and then transitioned to open face masks.

We now use it anytime there is an opportunity…Any non masked patient will use Align RT automatically.

ROOM DESIGN AND HALF GANTRY ROOM ISSUES

- These rooms pose many challenges but can be overcome to find the best solution for your clinic.
- If you have more than one room, we would recommend installing and commissioning the first room before adding it to all rooms to ensure the camera placement is optimal.
- We also encountered issues with needing reinforced camera brackets due to the vibration of the gantry rotating causing the cameras to fall out of calibration.

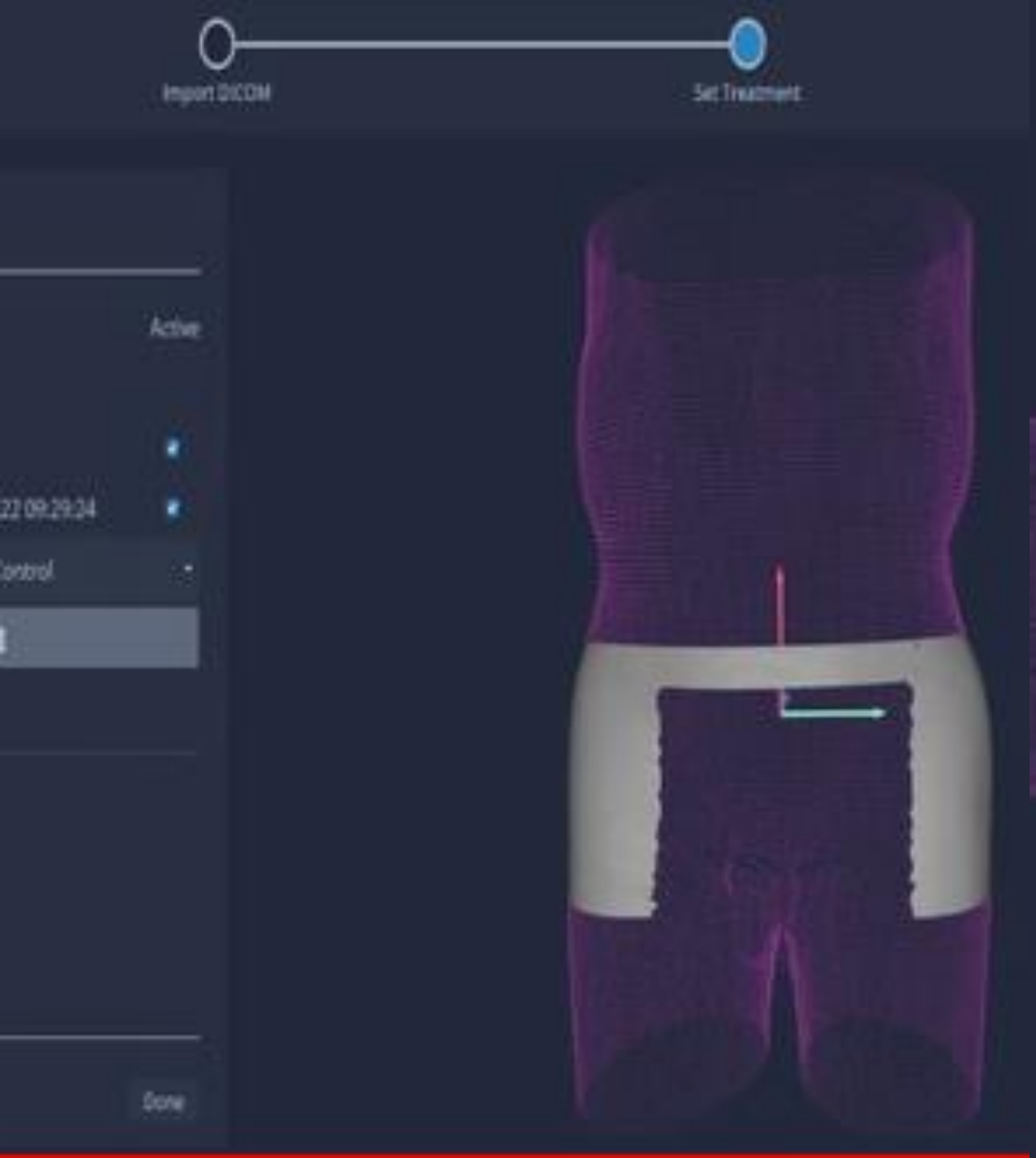
ALIGN RT MONITORS

Our center has 3 Align RT monitors for each room.

1 outside in the control room	1 in the treatment room	1 in the treatment room's imaging room

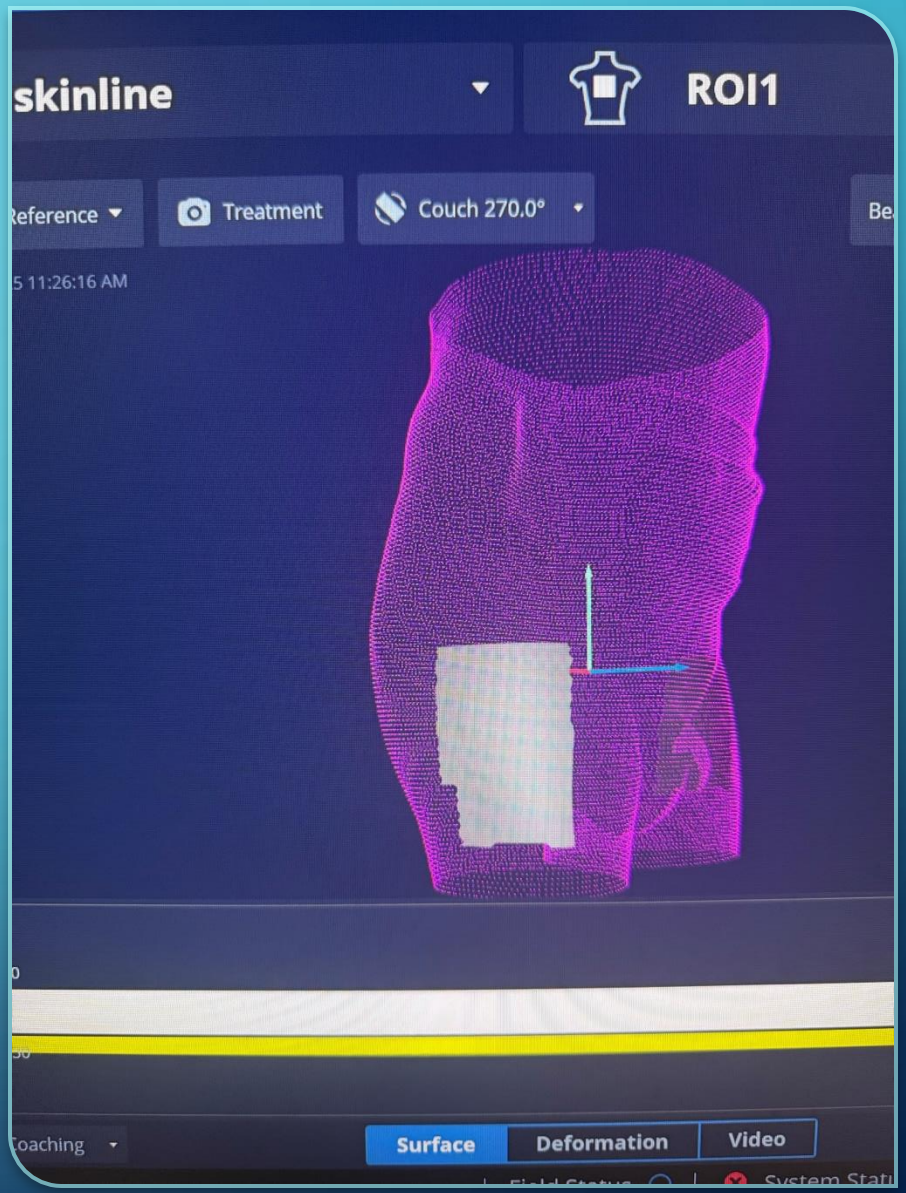
This has provided us with the ability to easily see and recapture the patient at any time needed

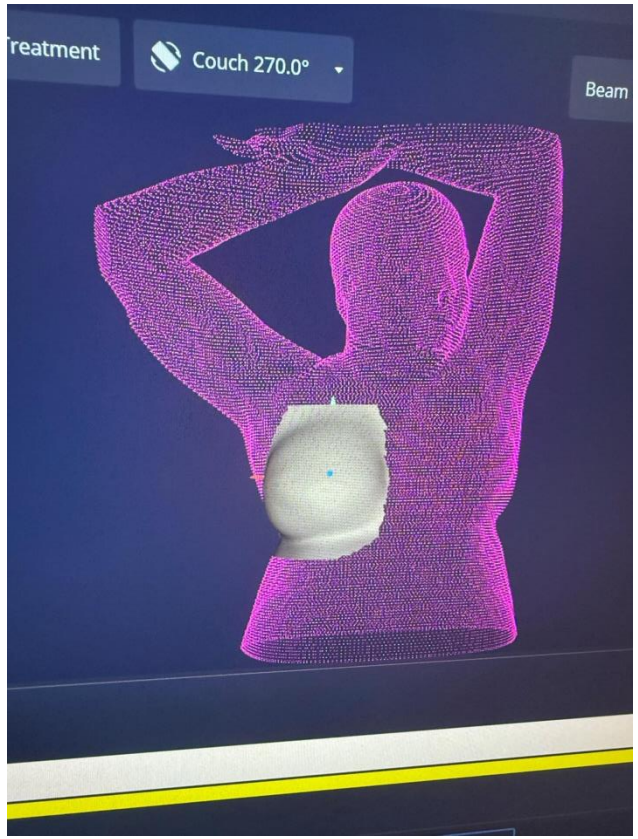
We have also added cheaters to help the RTT's know which way to have the patient move

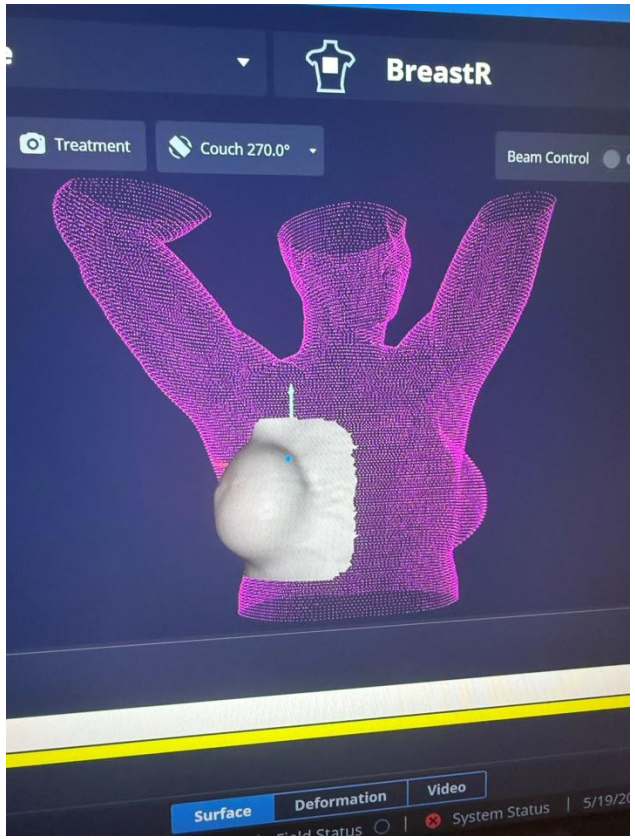

Import DICOM
Set Treatment
Active
Done

PROSTATE

- Our prostate setup included a CIVCO leg immobilizer that is indexed in a standard position for all patients.
- This eliminates the need to make vaclocs, saves on storage, and eliminates the issues of having the bag deflate.
- This ROI excluded the belly strip
- Avoid going too low on the leg this can cause inaccurate pitch errors.
- Ensure that there are not bottoms bunched under the patient
- No jean material



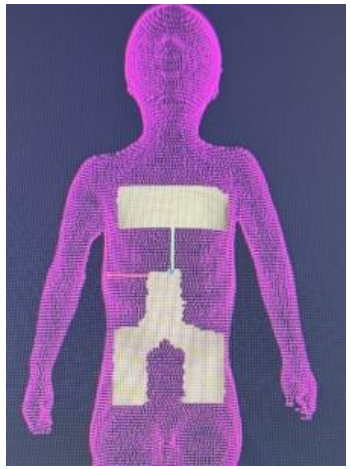




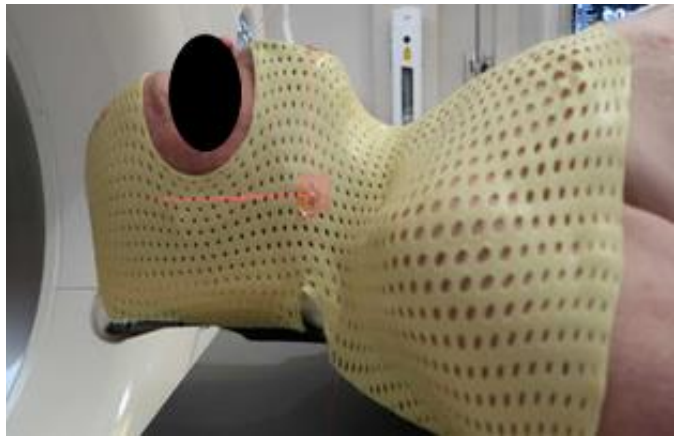
BREAST

- Our Breast setup consists of the ORFIT system, vac lock, and Orfit knee cushion.
- We document which wrist the pt is holding and have them turn their head.
- Vision has allowed us to ensure the arms and chin are correct with the postural alignment feature.
- Many of our breasts are reconstructed, but when we do have a large pendulous breast sometimes, we will exclude the breast tissue and draw more of a T across the clavicles and sternum.

CSI AND SGRT

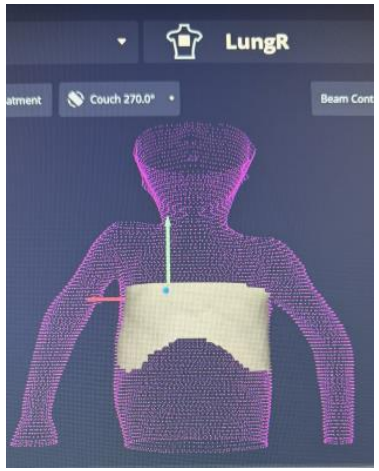


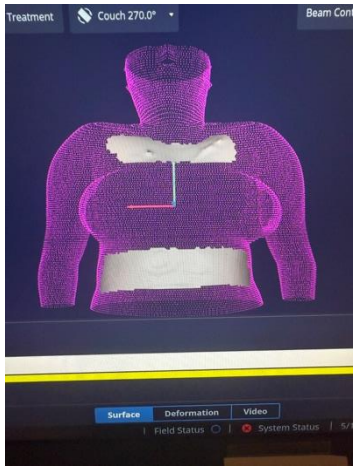
- Significant benefits have been observed in CSI treatments, which are challenging to image and treat.
- Initially, imaging was done from the brain down the spine to ensure perfect body alignment before treatment.
- SGRT has reduced initial imaging at table 270, our home position.
- With SGRT, imaging was reduced to just the brain, ensuring body alignment before kicking the couch.
- We only use 1 of the spine ISO's for creating an ROI for alignment.
- This process saved about 15-20 minutes of extra imaging and transitioning between iso centers before starting the treatment.



OPEN FACE MASKS

- Changed from a closed face mask to open face mask.
- Did an evaluation of 21 patients.
  - 10 H&N
  - 11 Brain masks
- Setups were not compromised from the open face mask
- Provided a better patient experience
- Faster setup times
- Less re-setups





USE ALIGN RT FOR ANY NON MASKED SETUP

- Unmasked Lungs
- Sarcomas
- Bodyfix setups

TATTOO-LESS CHALLENGES

- Being Tattoo-less is amazing but can have its challenges
- If the system is down for treatment
  - Breast
    - CT sim will document the distance from the sternal notch to the CT origin, and dosimetry provides any per plan shifts from there.
    - Due to having robotic couches we have an excel sheet that helps us calculate the table coordinates for the patient's setup and these are inputted before the patient starts treatment.
    - In the instance Align RT is down, we visually straighten the patient, ensure the correct hand is holding the correct wrist and go to our saved table coordinates.
  - Prostate patients
    - Visually straighten patient, use umbilicus table coordinate for longitudinal position, center pt on table, go to tx table coordinates calculated by dosi/RTT Chart Check

CT VERIFICATION SCAN CHALLENGES

- Many Treatment sites require multiple CT Verification Scans to check for anatomy/tumor changes
- We do not have CBCT imaging we only have KV imaging.
- We only have one room that has CT on Rails and are in the process of installing a 2nd scanner.
- If a patient needs a 4D v sim, these scans must be done in CT sim,
- If the area that needs to be scanned is too low, such as a CSI, we cannot scan low enough and these cases must also go to CT Sim
- There currently is not a Align RT sim system to set these patients up
- We have written SOP's that account for these situations.

ALIGN RT AND PROTONS

- While there may be a few challenges along the way there are far more benefits to using align RT in protons.

Thank You!!!!