

Implementing SGRT for almost every patient, every fraction

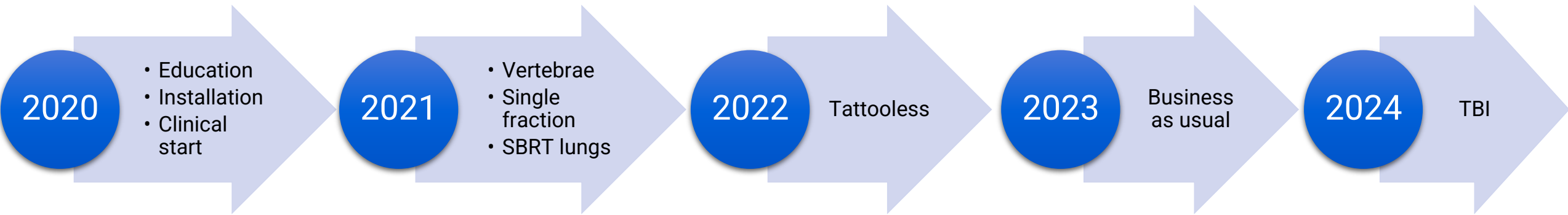
Emelie Adolfsson, Linköping

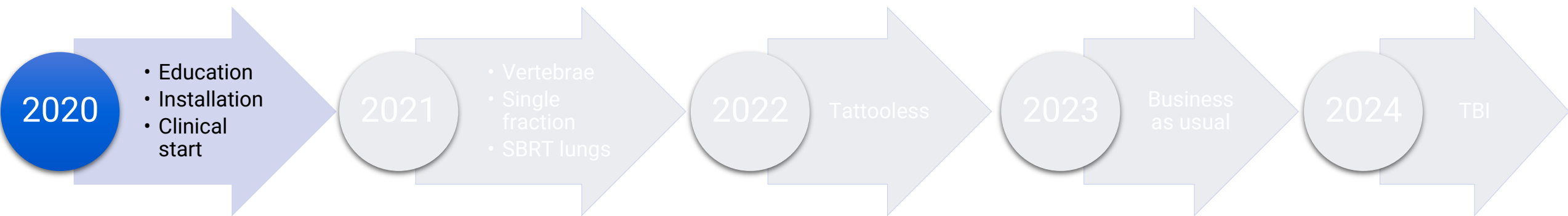
University hospital Linköping

- Four Varian TrueBeam, with AlignRT
- Brachytherapy
- Superficial x-ray therapy 30 kV-200 kV
- Siemens CT with SimRT
- GE MR
- Treat 1600 patients per year



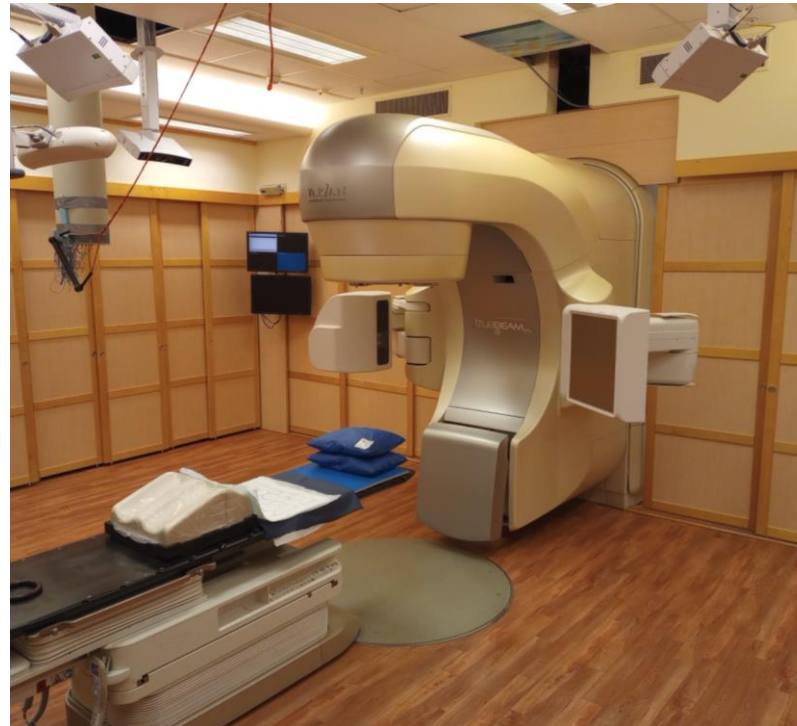
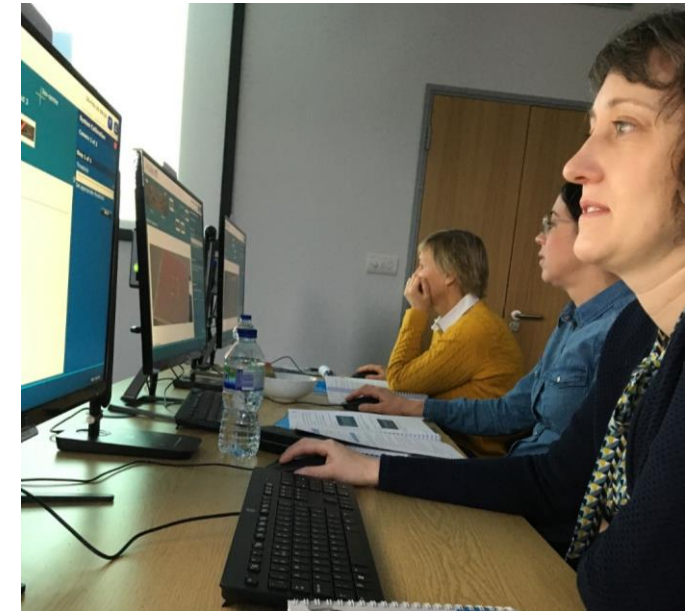
Content





Education and installation

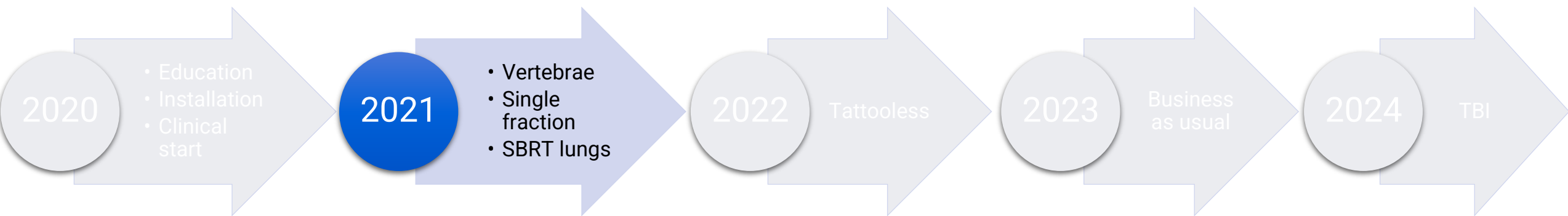
- Education in London 2020, superusers
- Education at home, all users
- Installation in September 2020
 - all linacs
 - SimRT



Clinical implementation

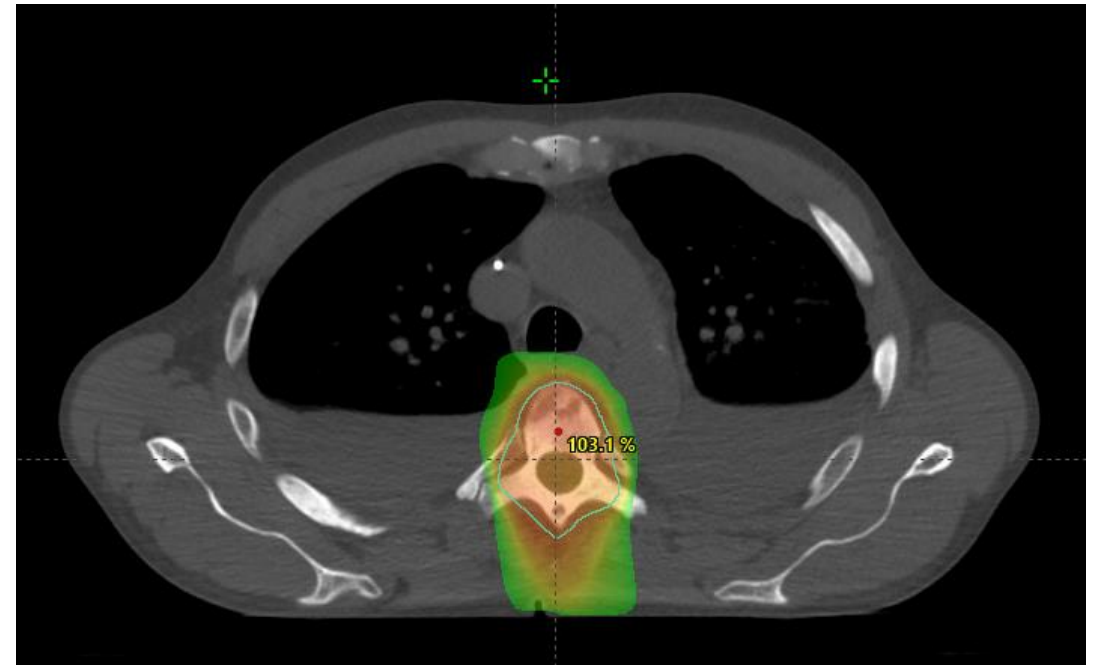
- Breast, including DIBH
- Pelvic treatments
- Thorax treatments
- Extermities





Vertebrae and single fractions

- Target far from patient surface
- Faster set-up using AlignRT
- Must be able to remove clothes



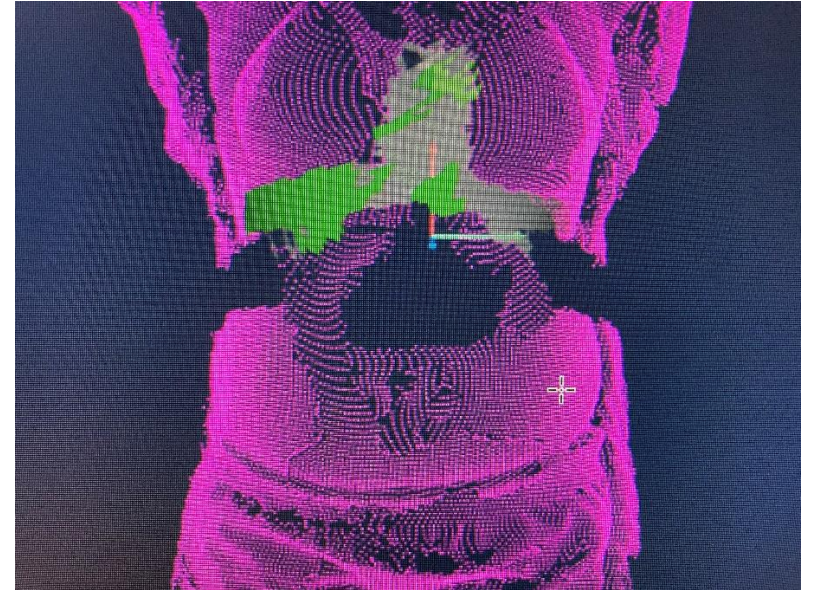
SBRT

- High precision treatment
- Fixation: Body Pro Lock Civco + vacuum shell
- 4DCT using SimRT
- Treatment planning
 - 15 Gy x 3
 - HD MLC
 - 6/10 FFF
- CBCT set-up verification



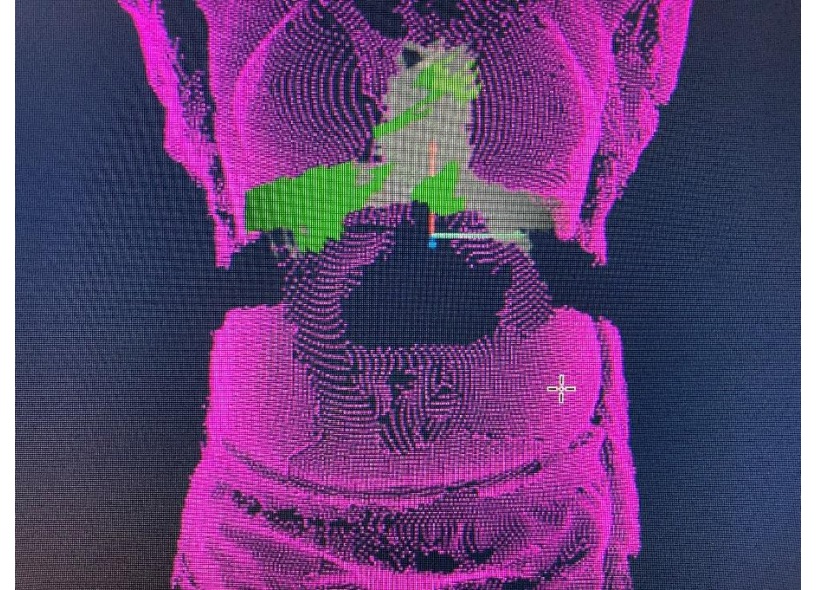
SBRT with AlignRT

- Can we use AlignRT with the respiratory plate?



SBRT with AlignRT

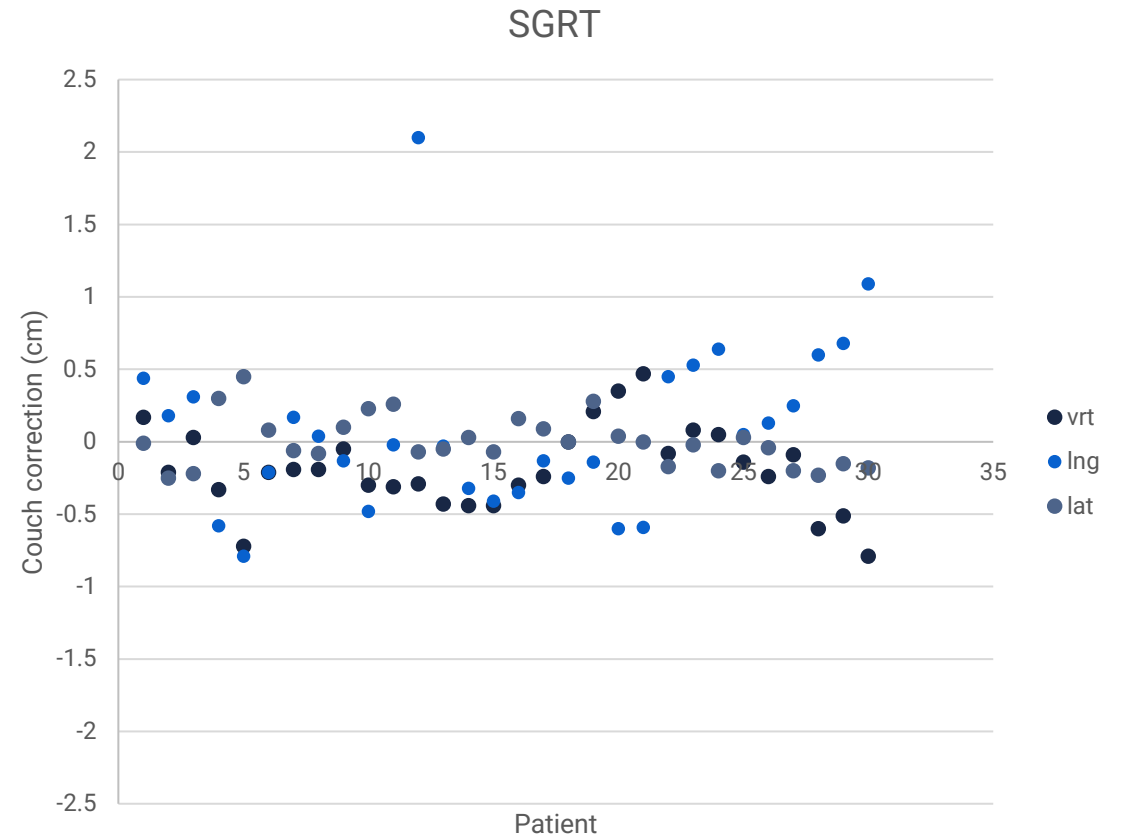
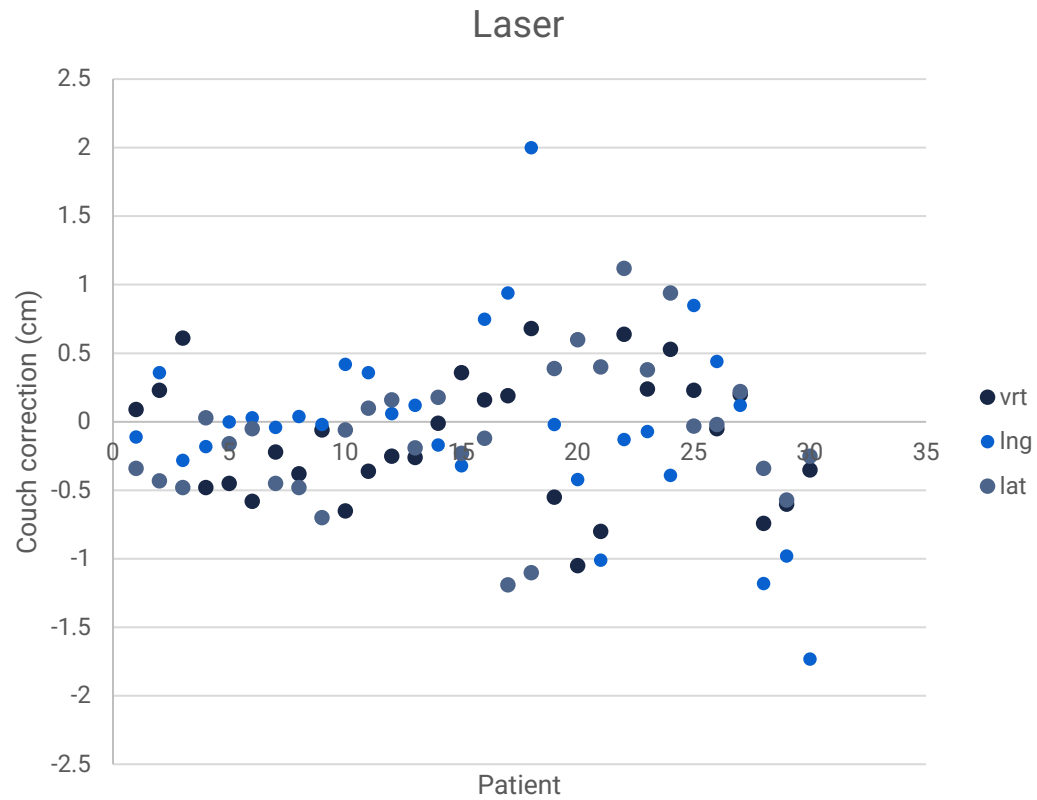
- Can we use AlignRT with the respiratory plate?
- Set-up using AlignRT
- CBCT verification
- Treat with beam control
- No time delay for beam hold



Evaluation of set-up position using AlignRT

- Two patient groups
 - i. Set-up using laser/tatoos
 - ii. Set-up using AlignRT
- 10 patient x 3 fractions = 30 set-ups per group
- Evaluation of couch corrections after CBCT

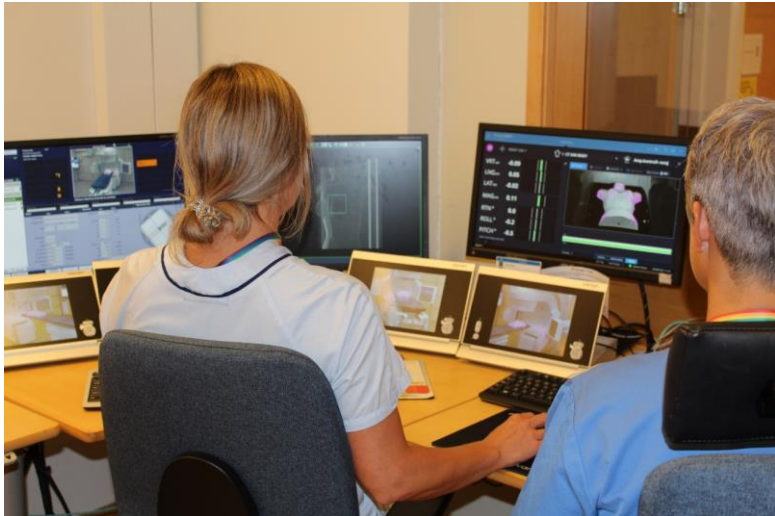
SBRT set-up without and with SGRT





Tattooless

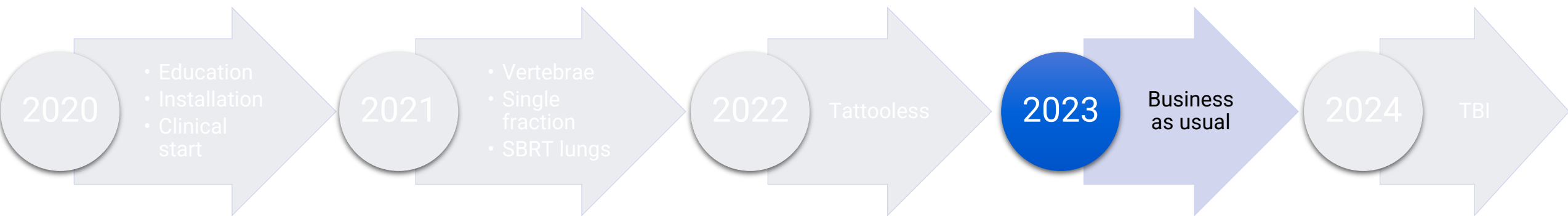
- Thorax in spring 2022
- Pelvis in autumn 2022



What we NOT use AlignRT for

- Mask patients
 - Brain, including SRT
 - Head and neck







Teamwork

- Super users
 - RTTs
 - Physicists
 - Meetings and discussions
 - Physicist present at treatments
- All staff
 - Theoretical education
 - Practical education
 - Open discussions (what is/isn't working?)



Teamwork

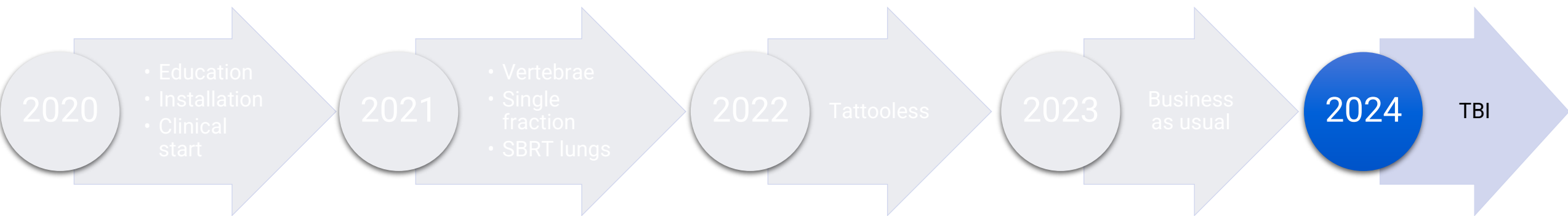
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PLAY WITH PHANTOMS!



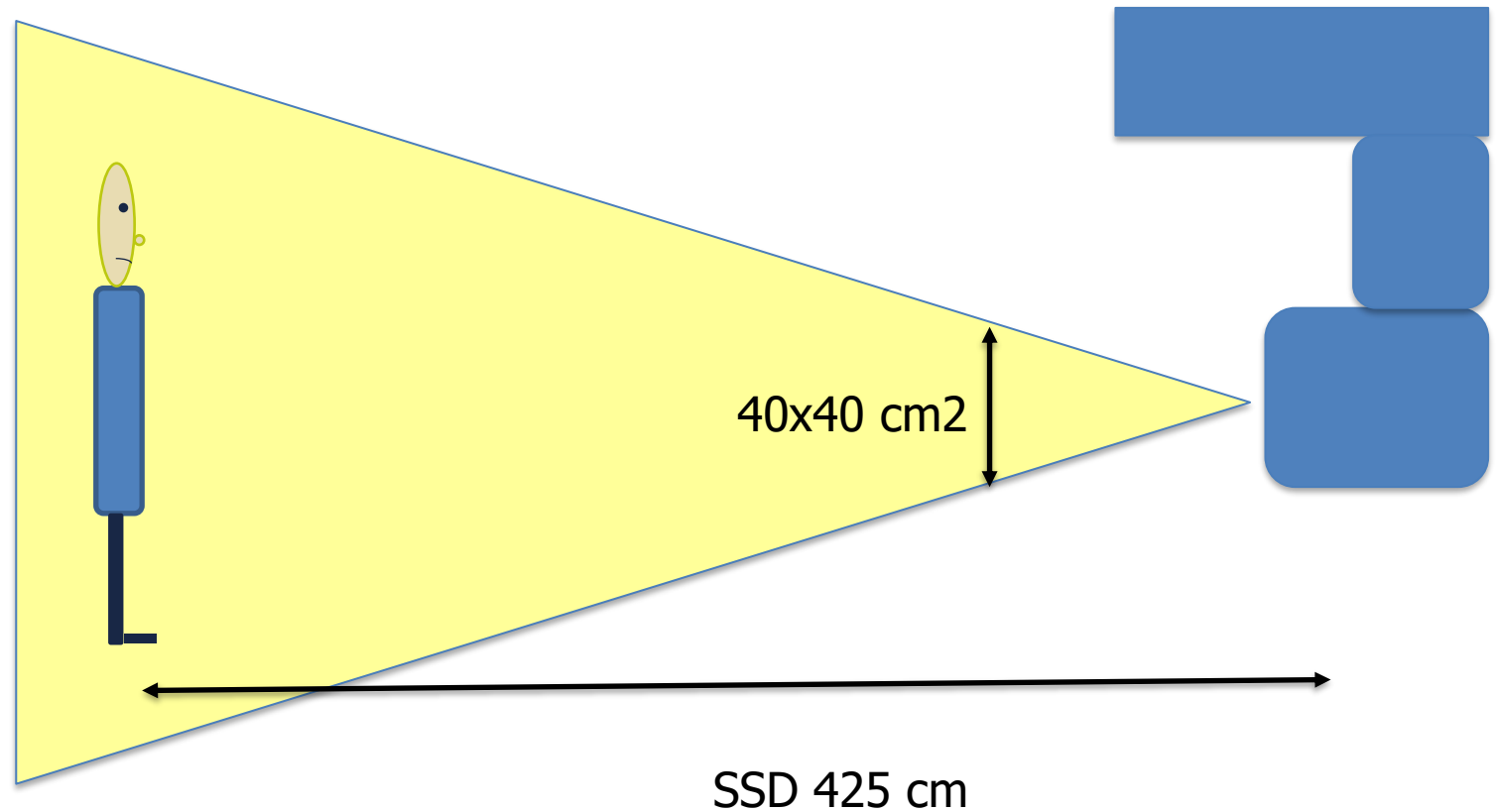
Phantoms





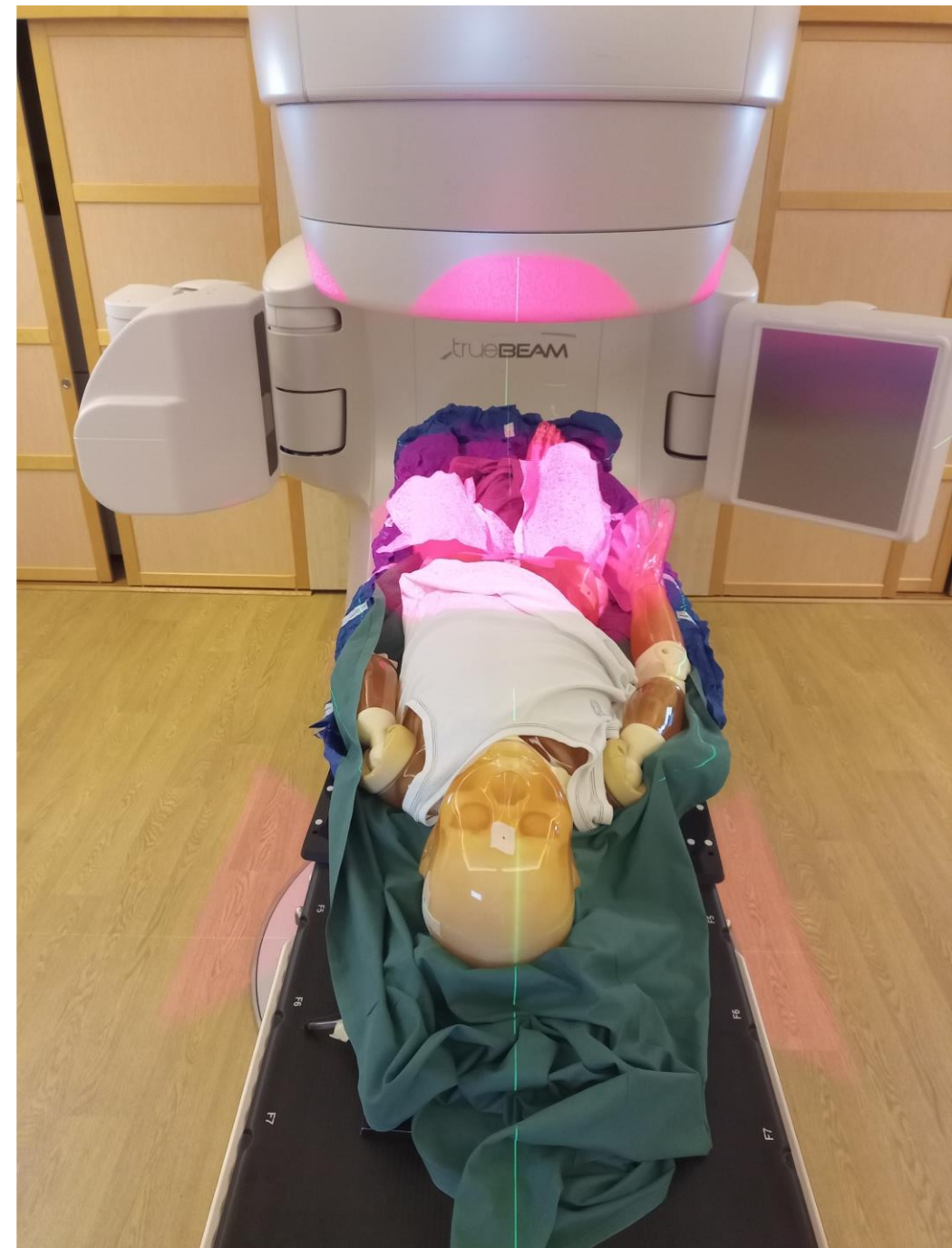
Total body irradiation 2 Gy x 6 = 12 Gy

- Before
 - SSD 425 cm
 - static open fields
 - Lead lung blocks



Total body irradiation 2 Gy x 6 = 12 Gy

- Now (soon)
 - VMAT
 - 10 isocenters
 - HFS + FFS
 - AlignRT for setup and monitoring



Conclusions from Linköping

- Work with the system as a team – you will need each other
- Spend time on the machines during treatment (physicist)
- Educate all staff
 - Theoretical
 - Practical
- Discuss issues with each other
- It takes time to learn, let it!

Tack!

