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# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Overview

### KSW

2 Varian Truebeam - **AlignRT**  
1 CT (Canon / Toshiba Aquilion LB) – **SimRT**  
Orthovolttherapie: WOmed T200  
Brachytherapie: Varian GammaMed iX  
Hyperthermie: Hydrosun TWH1500



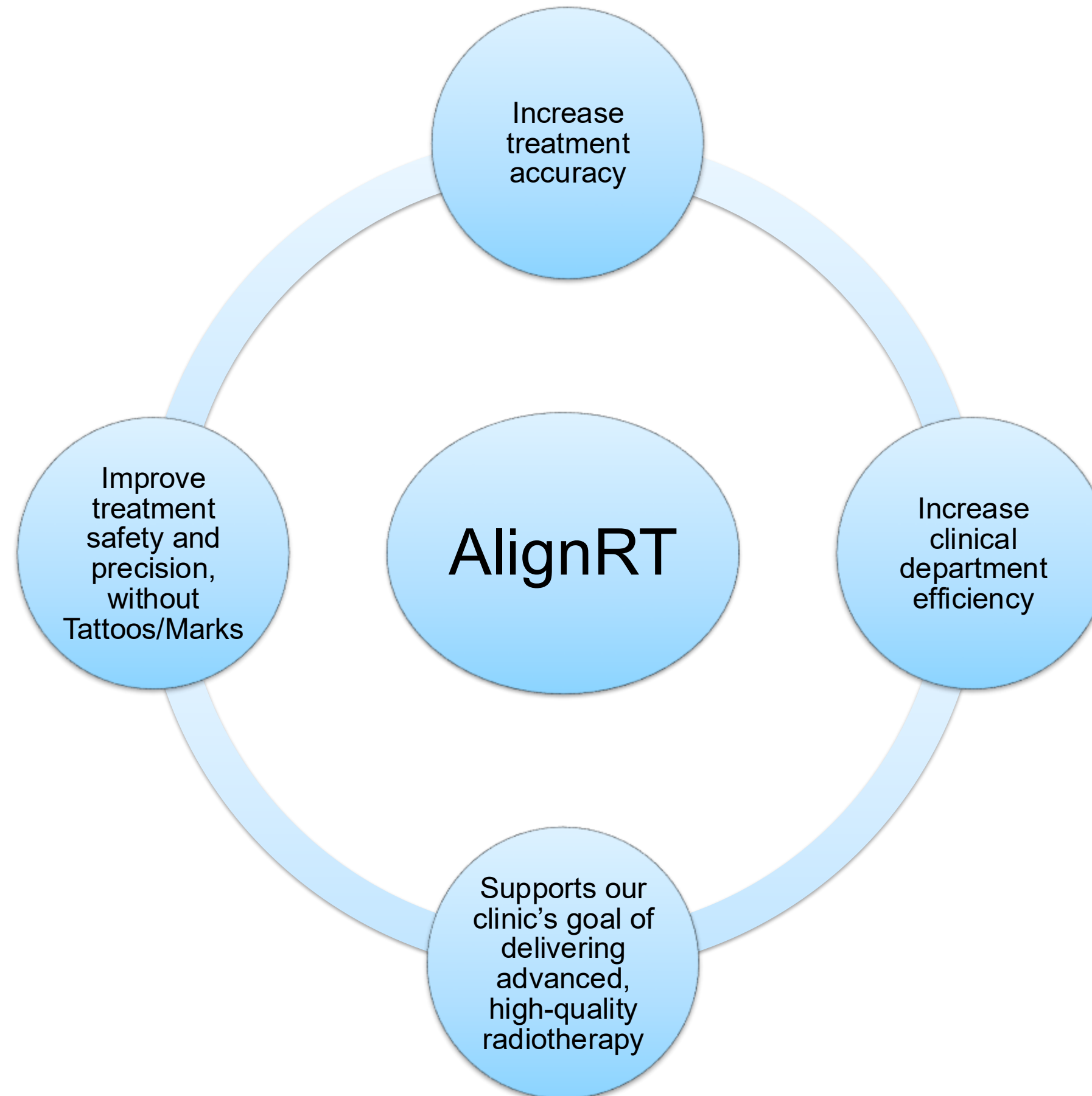
### ZRR

1 Varian Truebeam - **AlignRT**  
1 CT (Philips Brilliance CT Big Bore) – **SimRT**  
Orthovolttherapie: WOmed T105



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

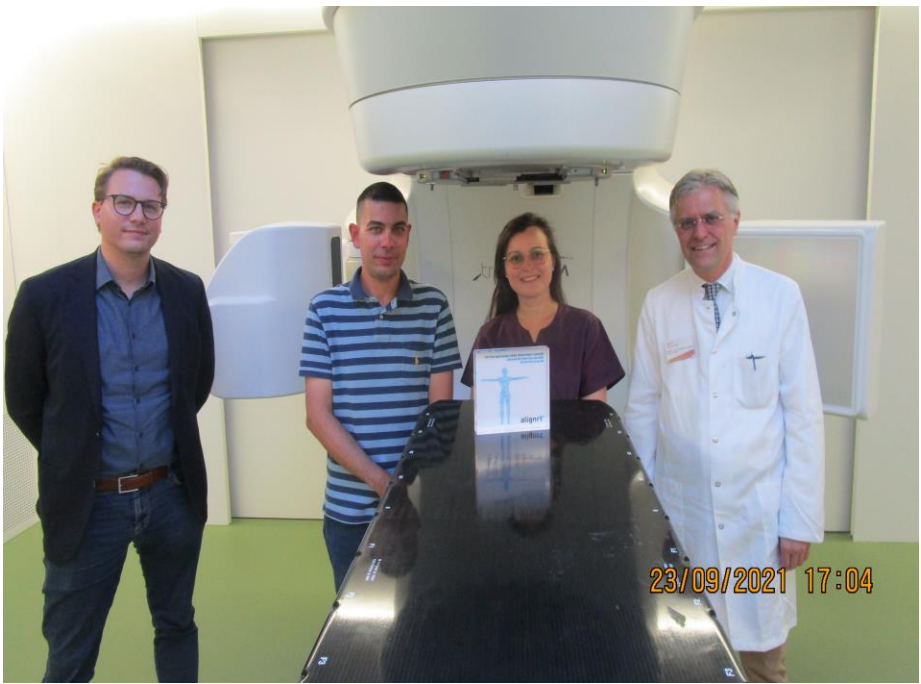
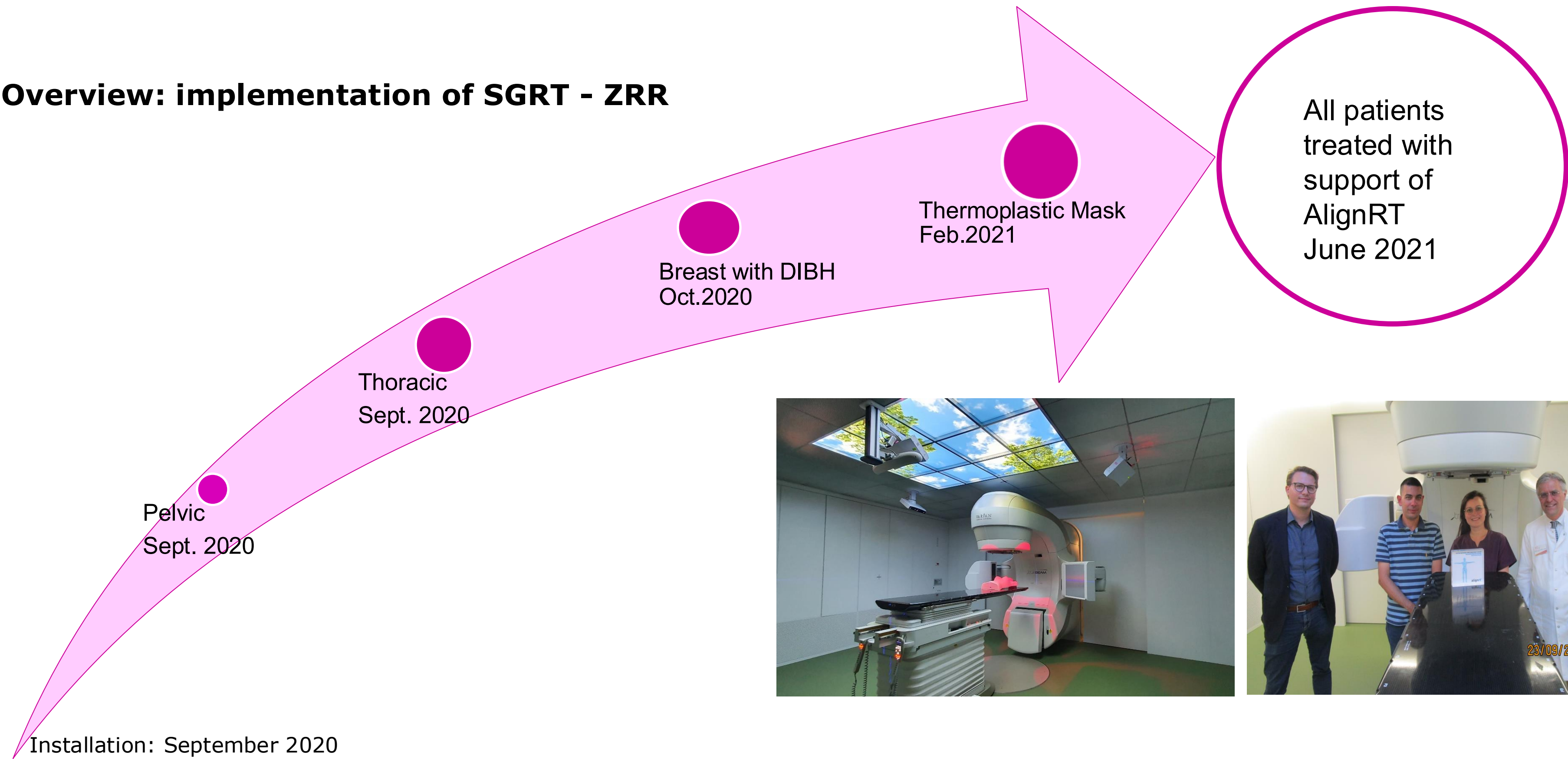
## Why SGRT?





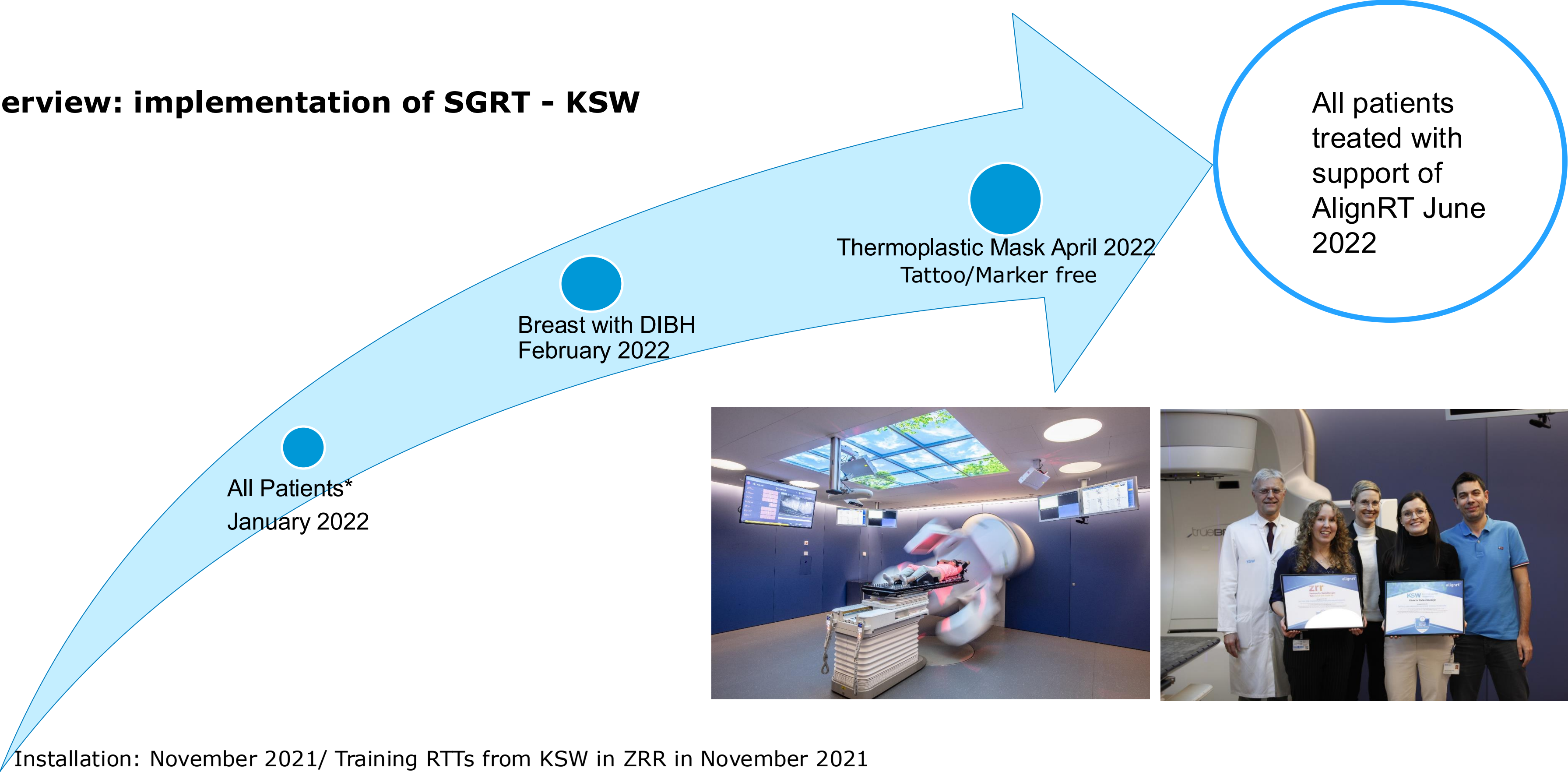
# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Overview: implementation of SGRT - ZRR



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

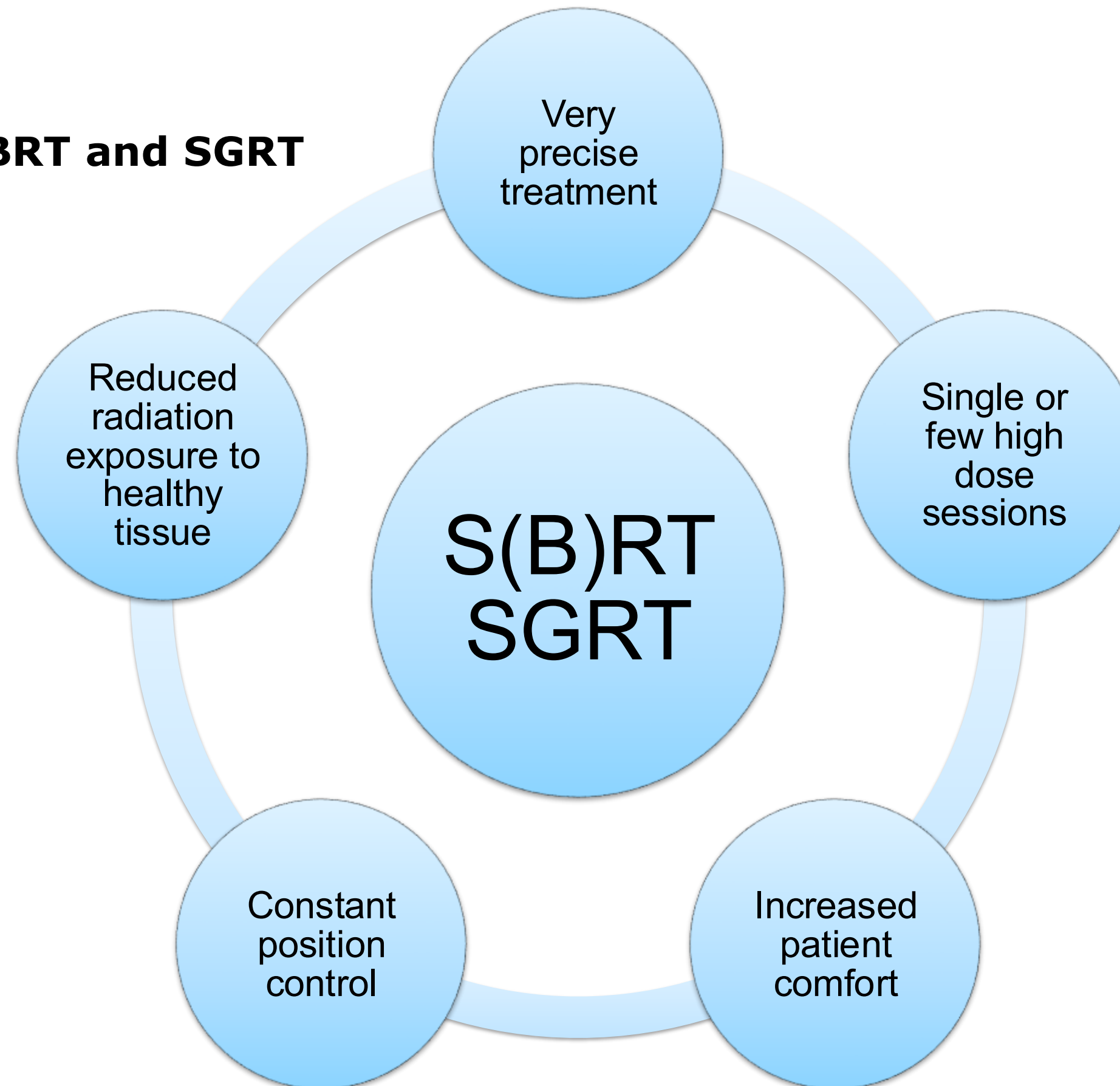
## Overview: implementation of SGRT - KSW



Installation: November 2021/ Training RTTs from KSW in ZRR in November 2021

# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

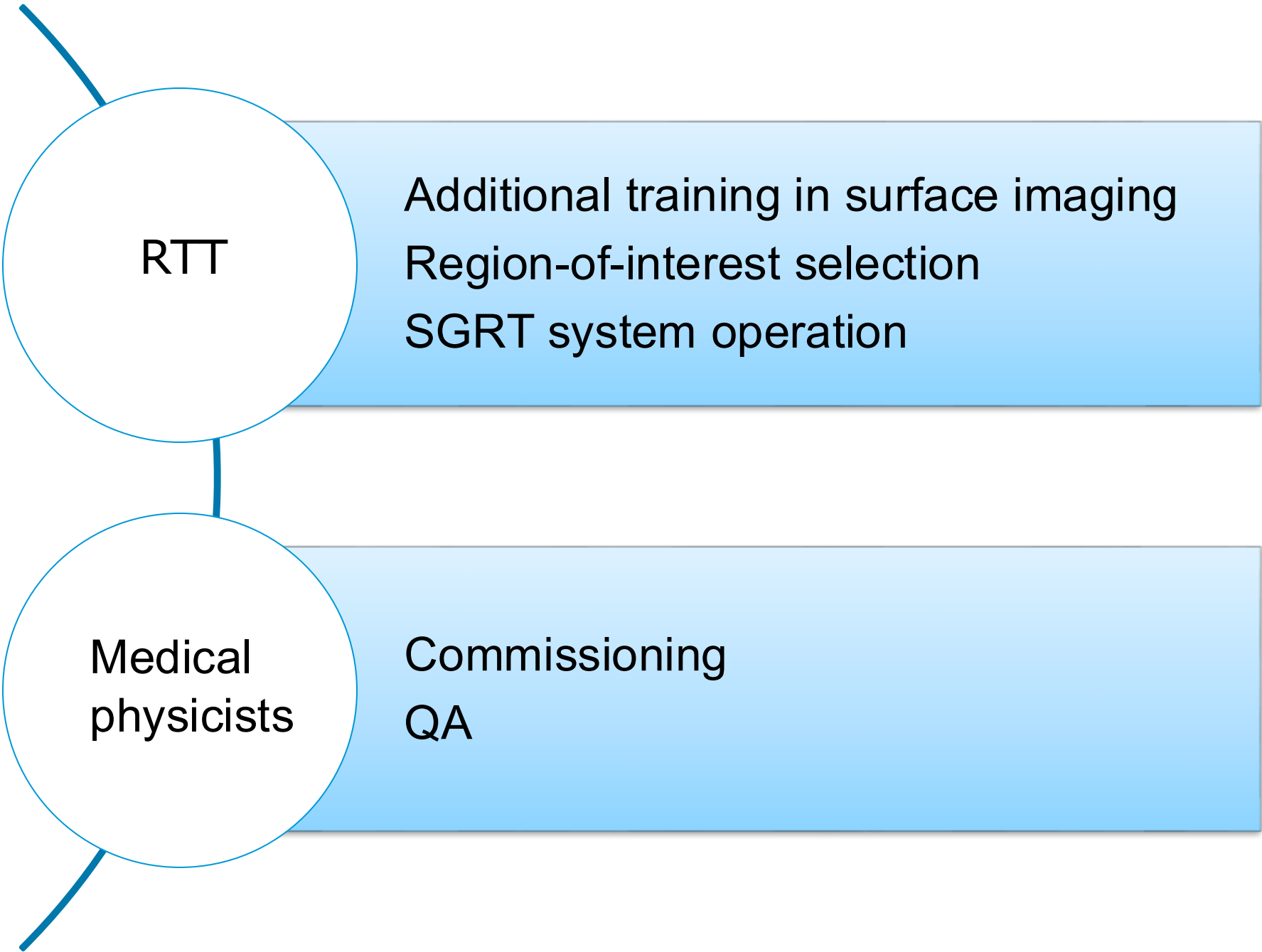
## Combination of SRT/SBRT and SGRT





# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

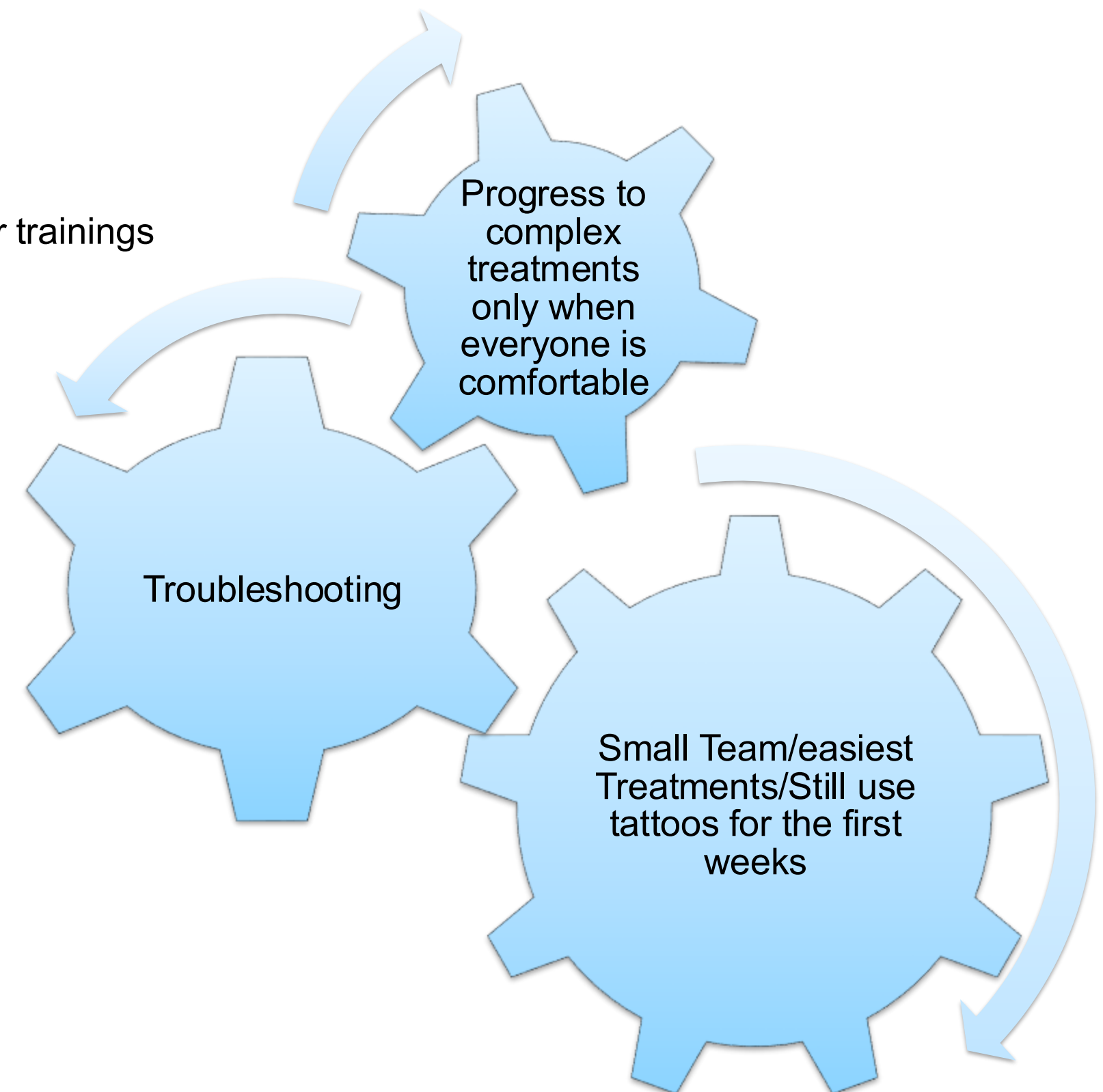
## Staff Implications and Training Requirements



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Staff Implications and Training Requirements

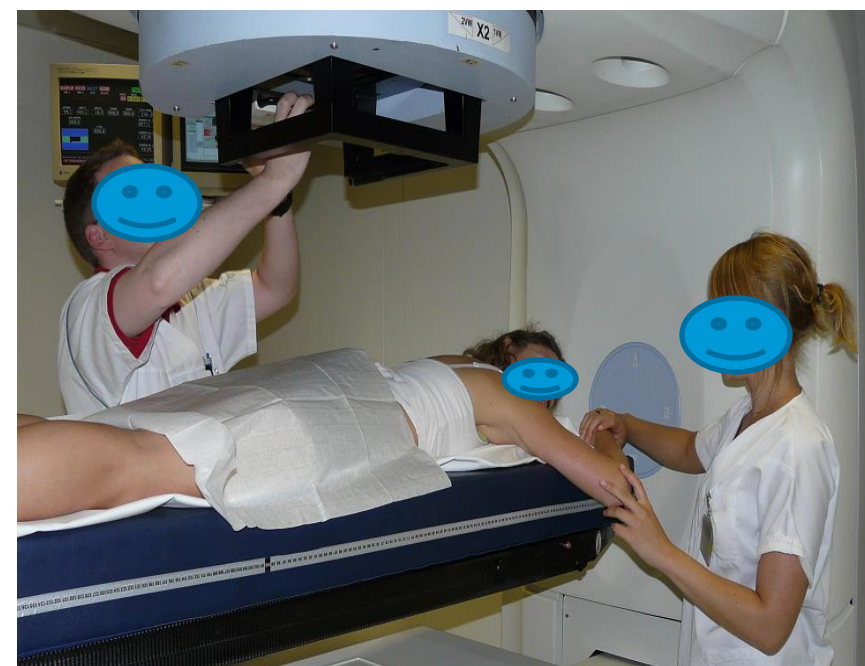
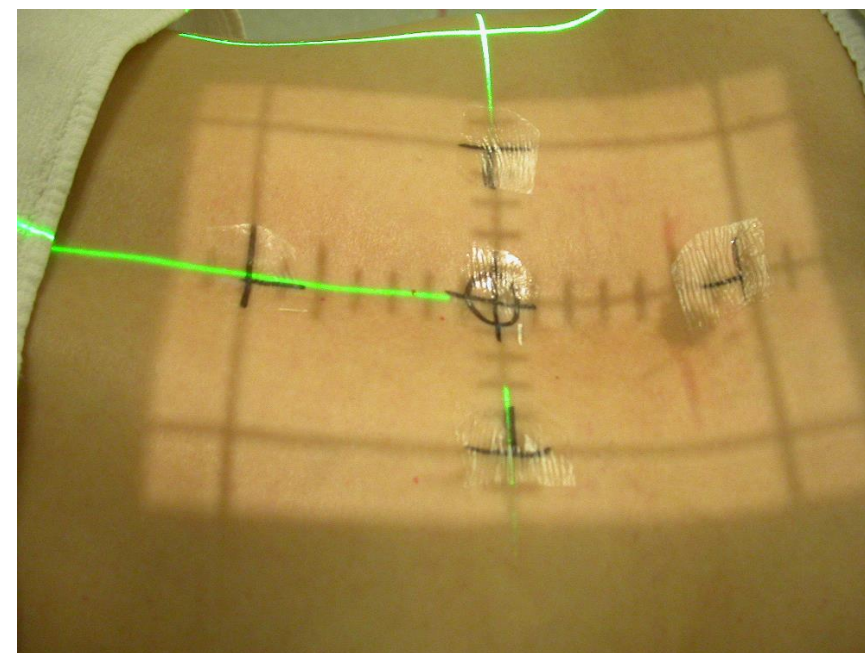
- Training with Application Specialist from VisionRT Team
- Definition of the responsible RTTs to develop the SOPs/Troubleshooting and for trainings
- Internal Meetings to develop the SOPs
- Presence of RTTs with experience as 3. Person
- Medical Physicist for 1st treatment
- Regular feedback meetings to update SOP/Troubleshooting practices
- One to one meetings – ROI definition
- Regular in House trainings to keep the team updated
- SGRTuesdays





# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

Looking back our journey in KSW: How treatment used to be in 2004 ☺





# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Clinical workflow comparison at planning-CT: Without vs. with SimRT



Until 2019/2020



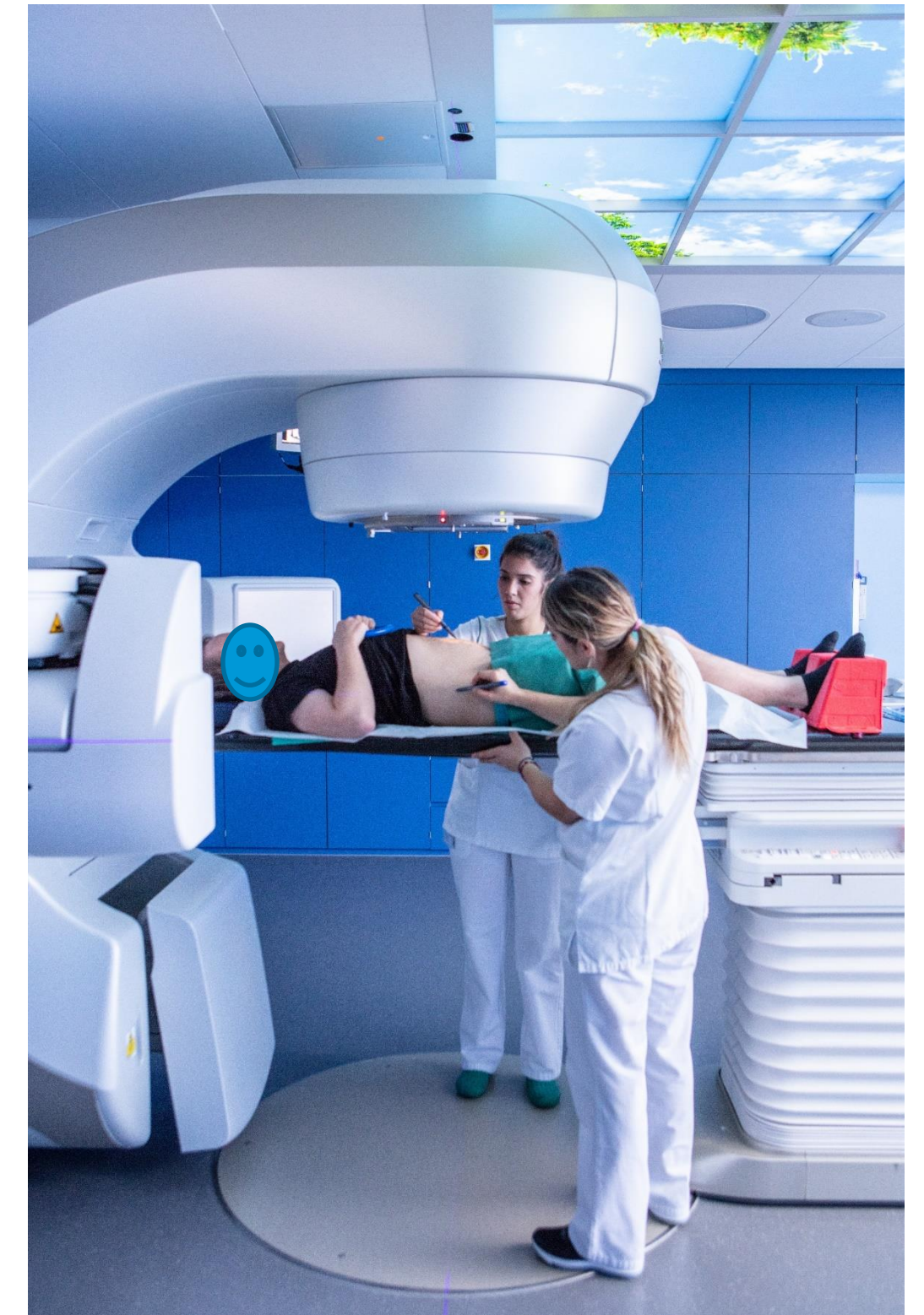
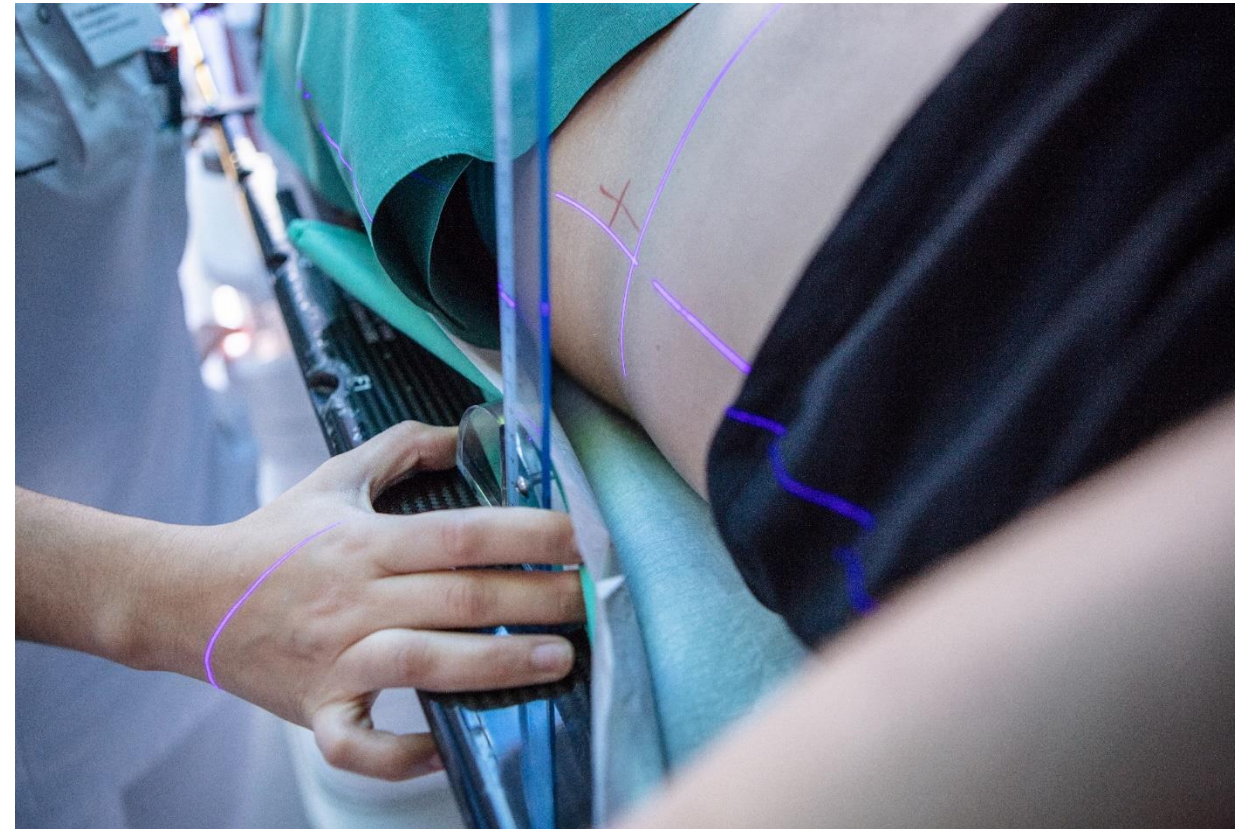
After 2019/2020

Tattoos—A thing of the past



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Standard clinical workflow at Linac (Pre-AlignRT)





# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Clinical workflow comparison at linac: With AlignRT





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## Clinical workflow comparison at treatment console: Without vs. with AlignRT



2019, without AlignRT

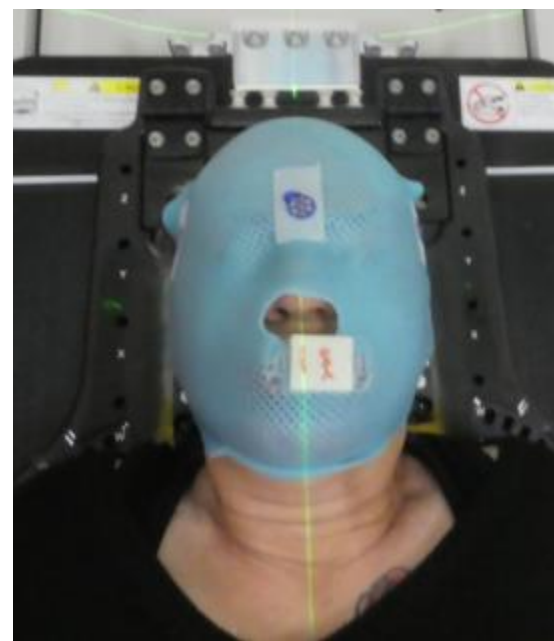


2022, with AlignRT

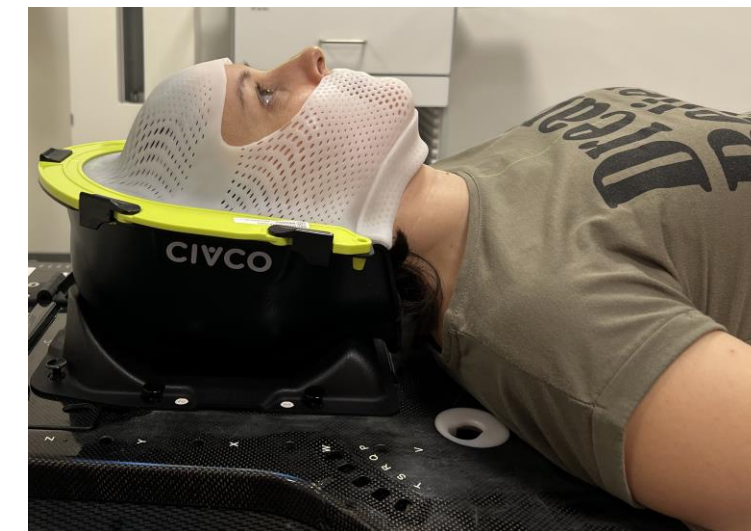


# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

**SRS/SRT closed-face mask (until 2021/2022) vs. open-face mask with AlignRT (after 2021/2022)**



CFM with bite-block, CQ Medical



OFM without bite-block (Solstice™ SRS, 3.2 mm; CQ Medical™)

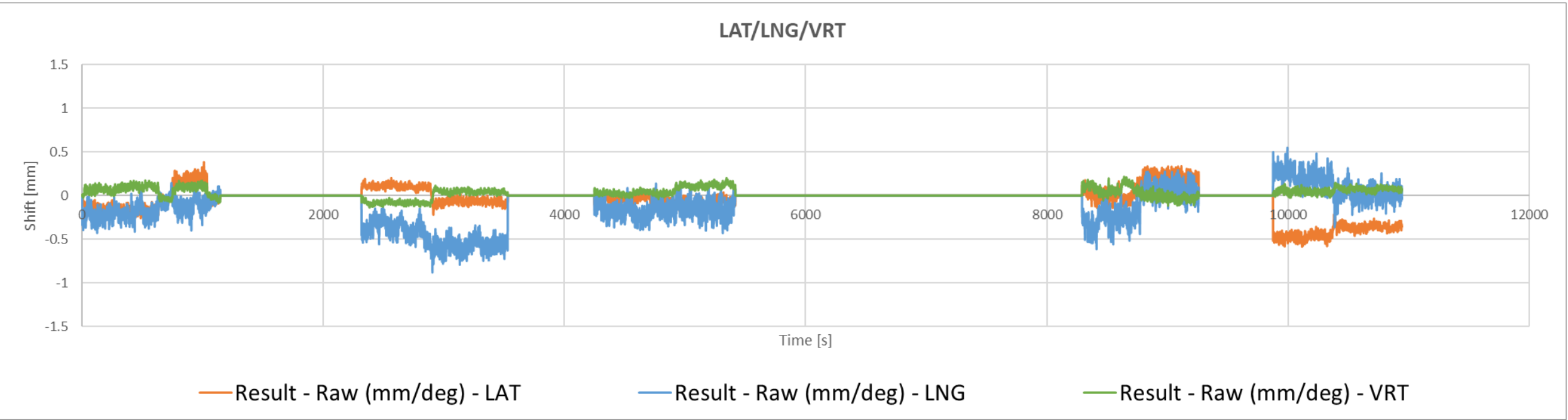
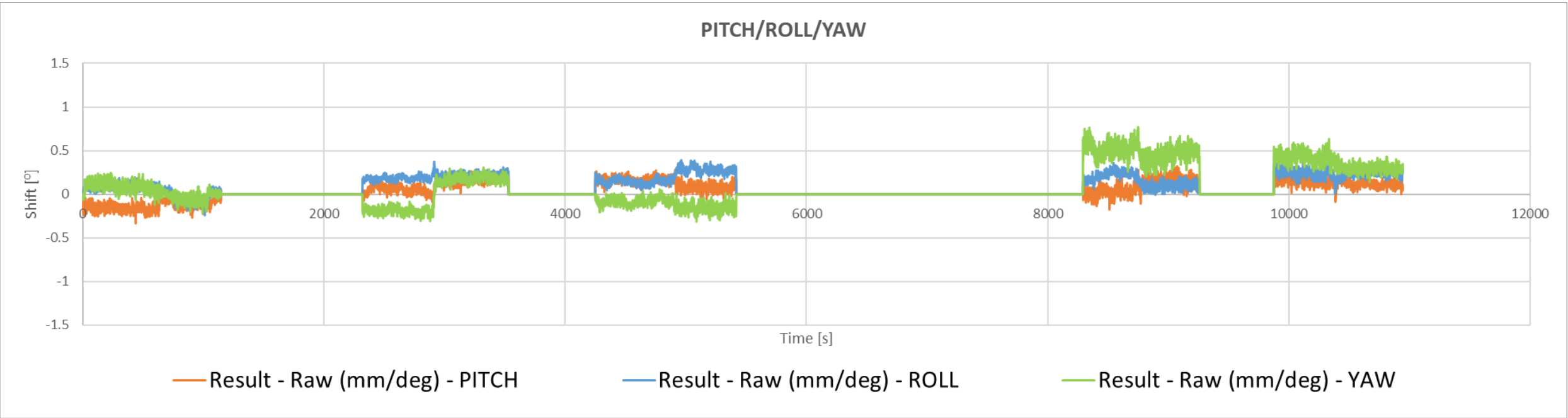


# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Open-face mask with AlignRT at linac



Set up with AlignRT

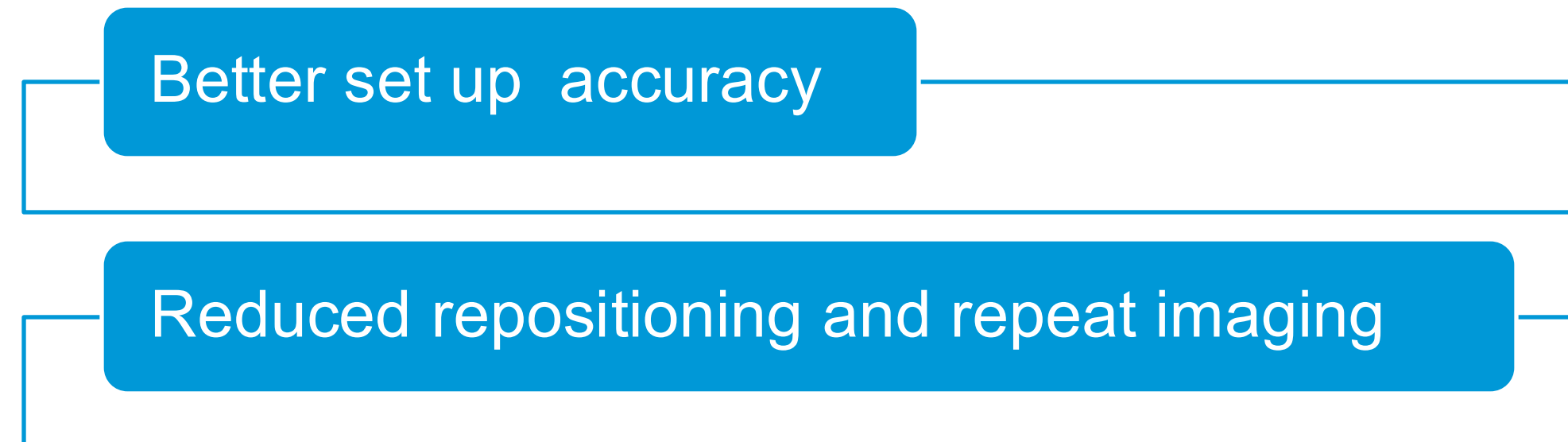


AlignRT 6DoF/Real Time Delta during beam on ( $\leq 1^\circ$  &  $\leq 1\text{mm}$ )

# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Case Study: Closed versus open face mask with AlignRT (SRS/SRT)

### Results:

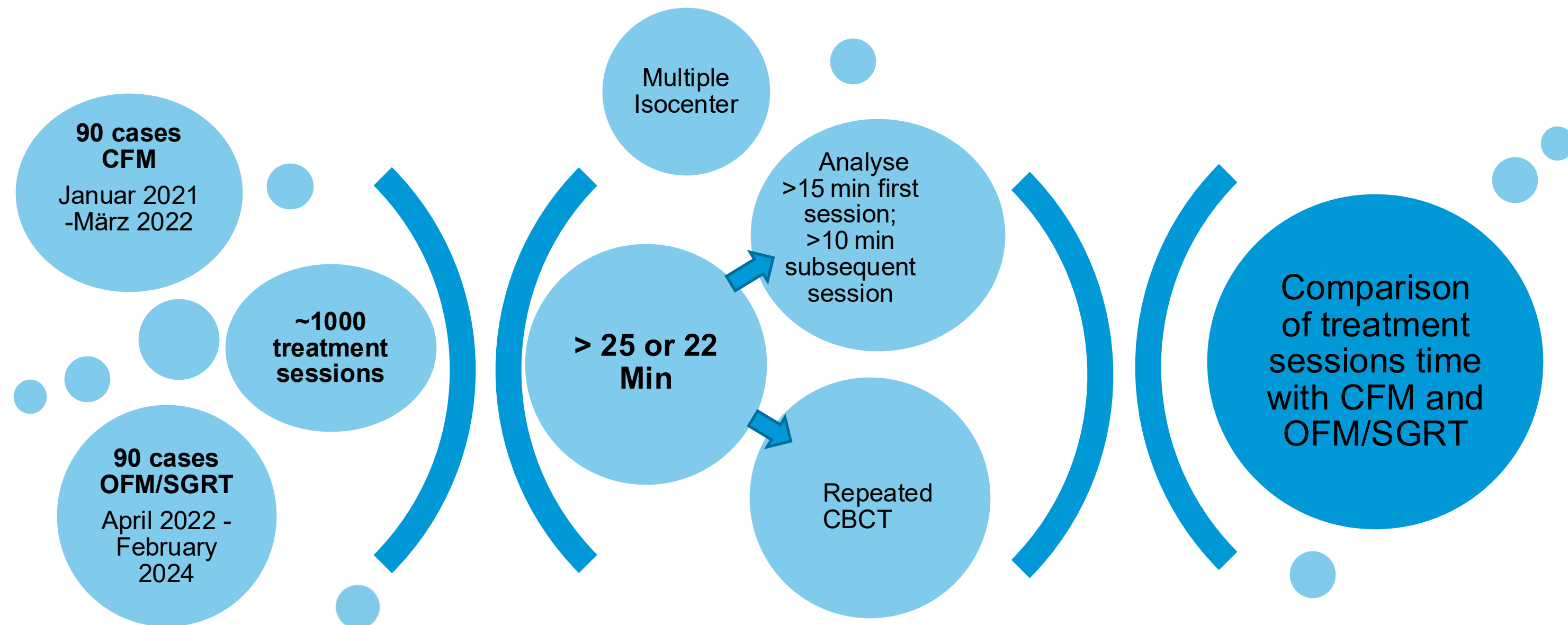




# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Case Study: Difference in Treatment Time: Closed-Face Mask (CFM) vs. Open-Face Mask with AlignRT (OFM/SGRT)

Retrospective Analysis of **Treatment Time** in Brain Metastases Patients Treated with SRT/SRS (2020–2024)

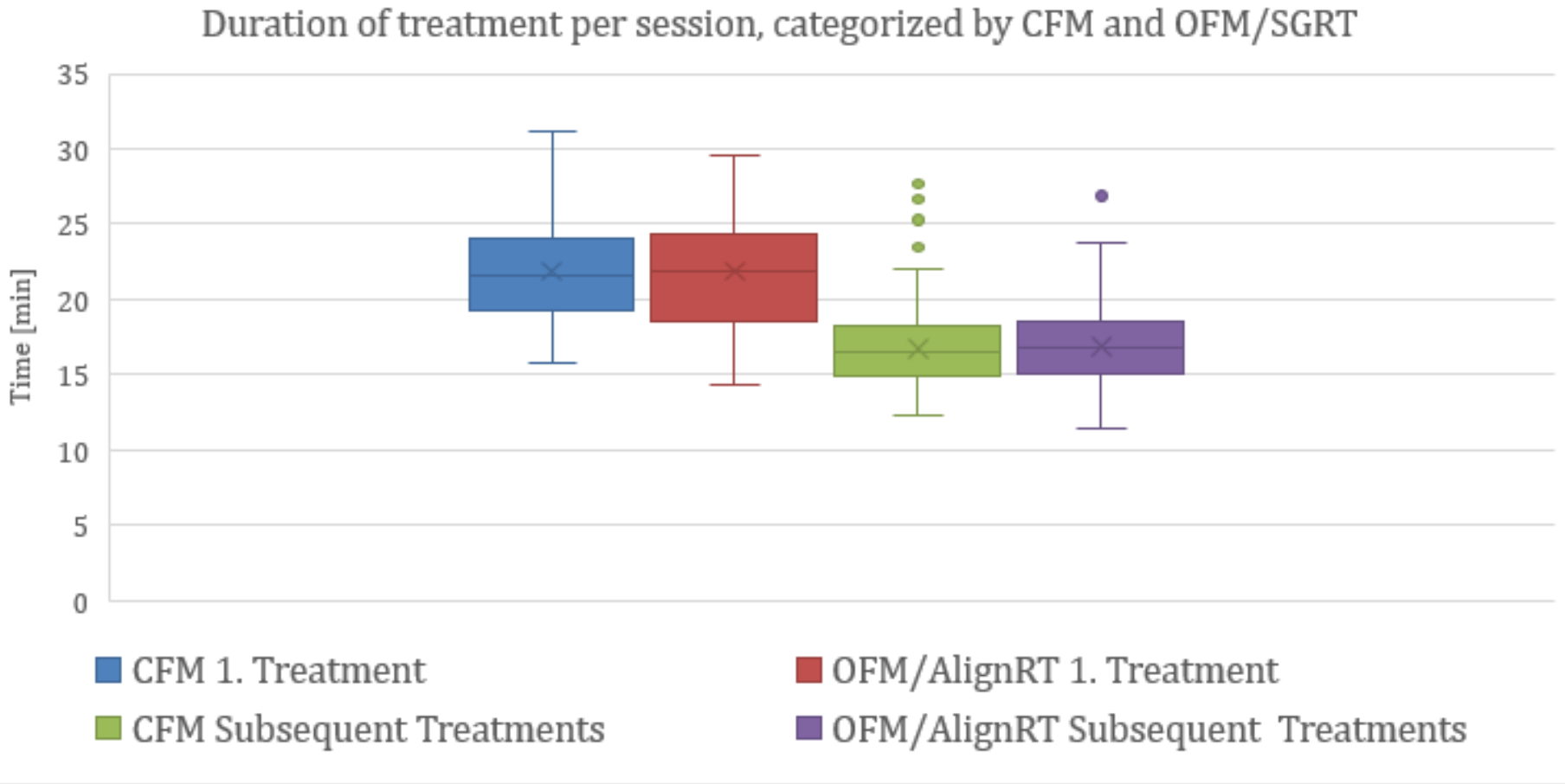


# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Case Study: Difference in Treatment Time: Closed-Face Mask (CFM) vs. Open-Face Mask with AlignRT (OFM/SGRT)

### Results:

Mask type	Number of sessions	Mean ± SD (min)	Min – Max (min)	p-value (T-test)
First session	- OFM/SGRT	59	21.9 ± 3.6	p = 0.98
	- CFM	57	21.9 ± 3.3	
Subsequent session	- OFM/SGRT	240	16.9 ± 2.6	p = 0.47
	- CFM	212	16.7 ± 2.6	



- Potential for improved department throughput
- Staff training critical for maximizing workflow efficiency



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Limitations:

- Staff inexperience may have increased session durations with OFM/SGRT
- Session times are now believed to be shorter
- Updated analysis will be conducted soon



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

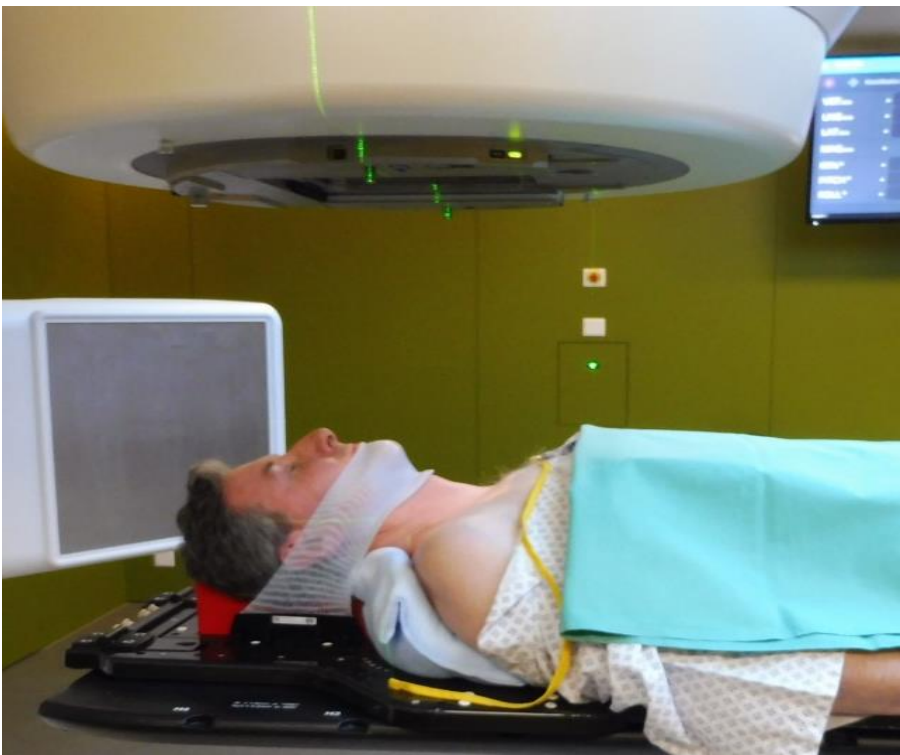
## Treatment time of last 4 treated Patients SRT/AlignRT

Mask type	Number of sessions	Mean ± SD (min)	Min – Max (min)
First session OFM/SGRT	4	<b>21.9 ± 3.6</b> Neu: 21.1 ± 1.7	<b>14.3 - 29.6</b> 18.2 - 22.7
Subsequent session - OFM/SGRT	18	<b>16.9 ±2 .6</b> Neu: 15.4 ± 1.6	<b>11.3 - 26.9</b> 12.72 - 20.18



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Move from OFM to Chin Mask for HNO Patients



# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Conclusion

- ✓ Shorter minimum treatment times → improved workflow efficiency
- ✓ Promising standard of care for brain SRT/SRS
- ✓ Enhances patient experience and comfort
- ✓ Allows more attention to patients during setup
- ✓ Reliable for both standard treatments and SRT/SRS/SBRT
- ✓ **SGRT is a powerful adjunct to stereotactic treatments, improving precision, safety, and comfort**





# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Key Takeaways / Lessons learnt

You would NOT drive a car from A to B without a seatbelt because it removes a basic layer of safety. SGRT works the same way in RT — it adds that extra safety layer by checking the patient's position in real time.

**Because safety is not an option when we have the choice to ensure it!**





# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

## Acknowledgments

Radio-Oncology Teams at **KSW & ZRR**

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**RTT Team** – for their dedication and support





# Implementing SGRT for stereotactic treatments: Practical Steps for a Successful Start

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## Questions & Discussion

