

# Evaluatie criteria voor DL segmentatie, planningen en sCT

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Themadag Radiotherapie, 28-03-2024

**Gedreven  
door het  
leven.**

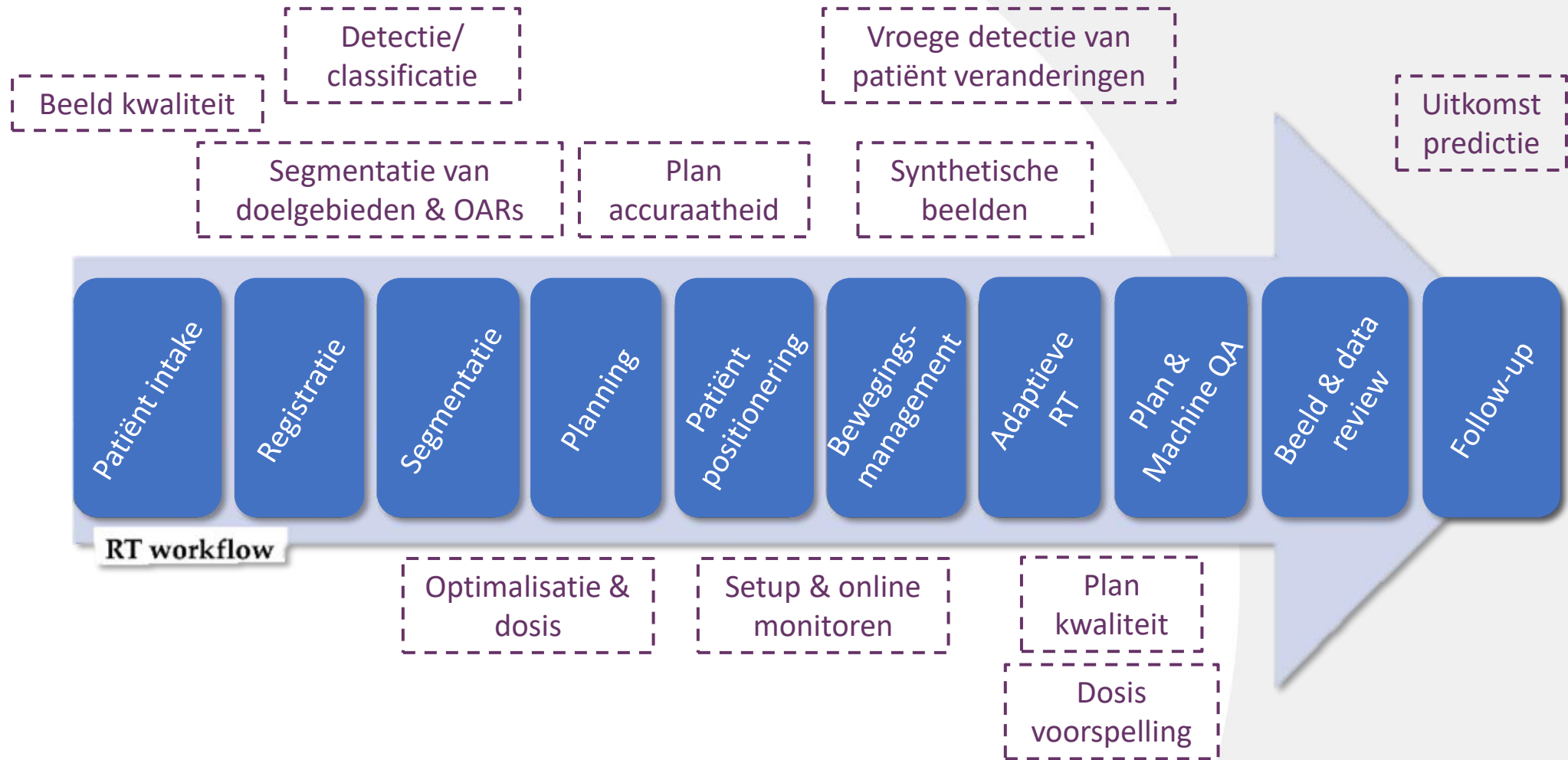


# AI in radiotherapie

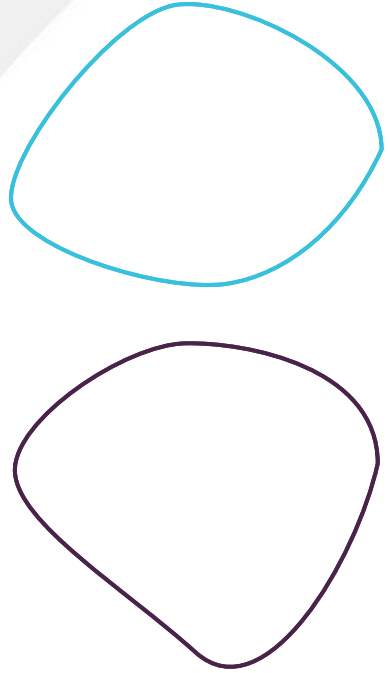
## Waarom wordt AI toegepast?

- Tijdwinst
- Afname in variabiliteit
- Kwaliteitsverbetering
  - Direct door verbetering van beeldvorming
  - Direct door toepassen van betere AI modellen
  - Indirect door tijdwinst toe te passen op andere vlakken

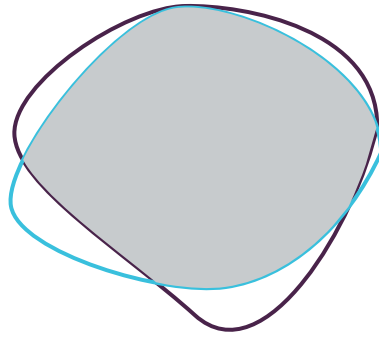




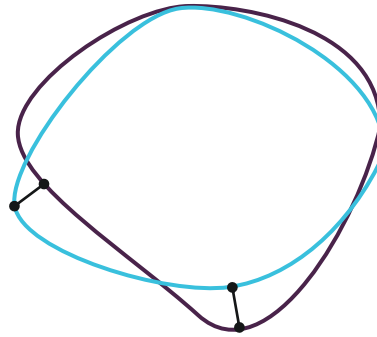
Segmentatie van  
doelgebieden & OARs



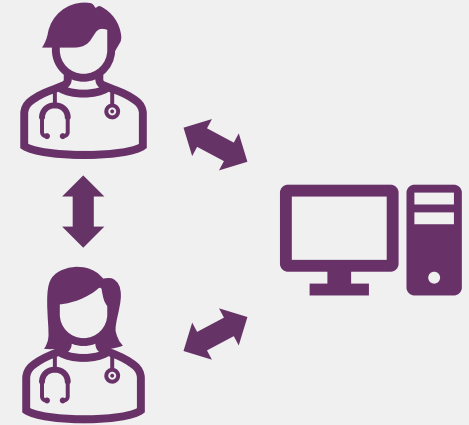
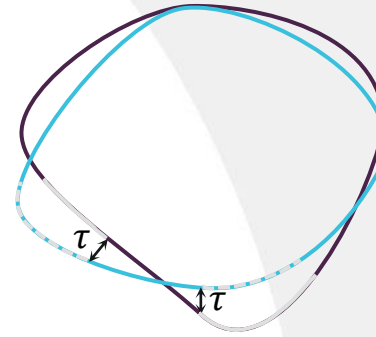
Dice Similarity  
Coefficient (DSC)



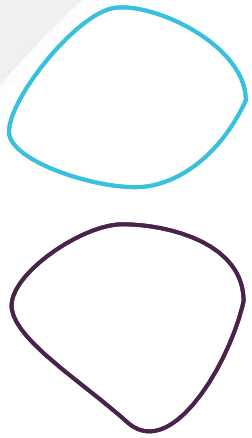
Hausdorff  
Distance (HD)



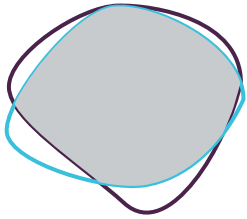
Surface DSC (sDSC)



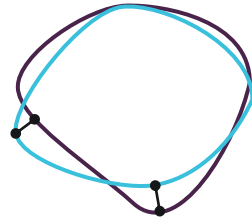
# Segmentatie van doelgebieden & OARs



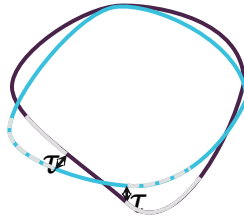
Dice Similarity Coefficient (DSC)



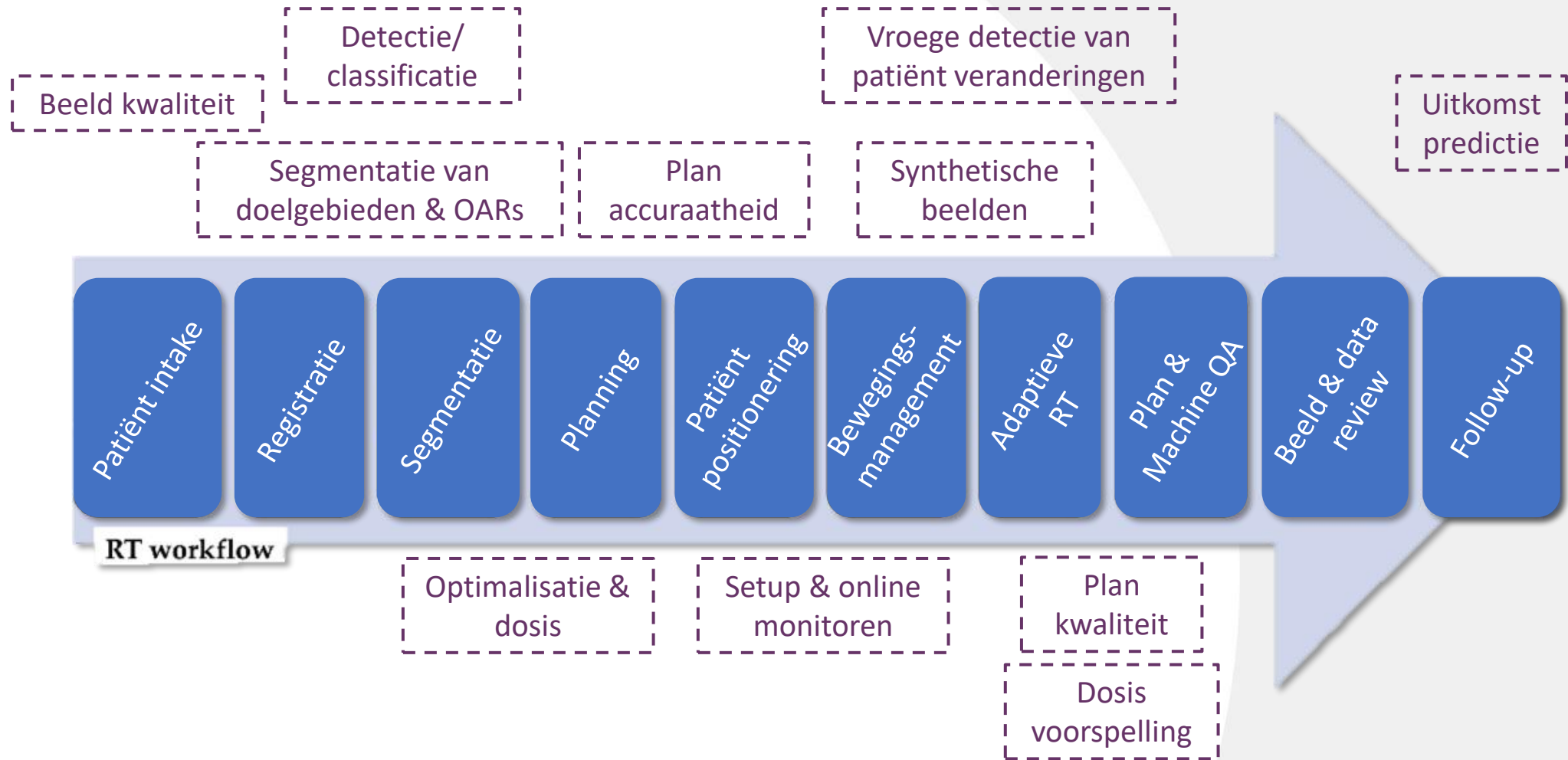
Hausdorff Distance (HD)



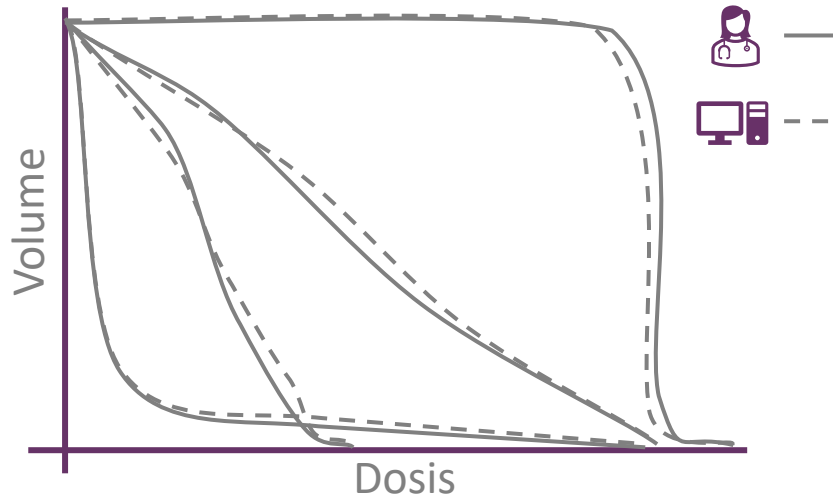
Surface DSC (sDSC)



1. Geen correctie nodig
2. Kleine correctie nodig
3. Grote correctie nodig
4. Niet bruikbaar



Optimalisatie & dosis

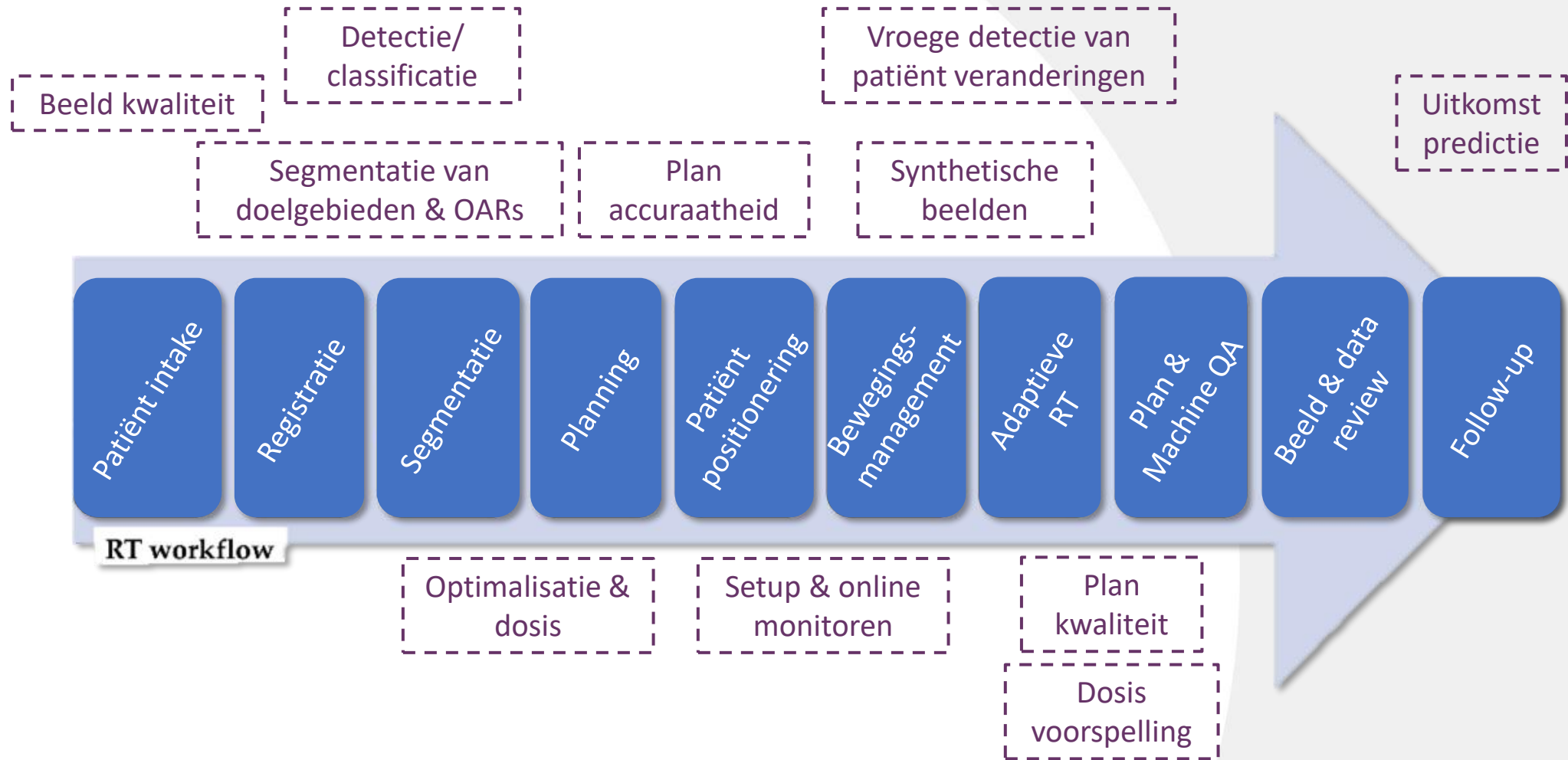


	PTV $D_{mean}$	PTV $D_{max}$	OAR $D_{mean}$	OAR $D_{mean}$
	✓	✓	✓	✗
	✓	✓	✗	✓



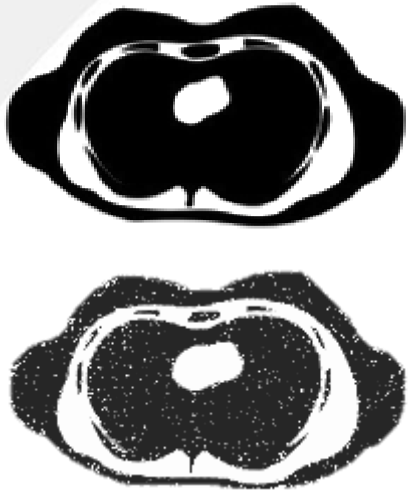
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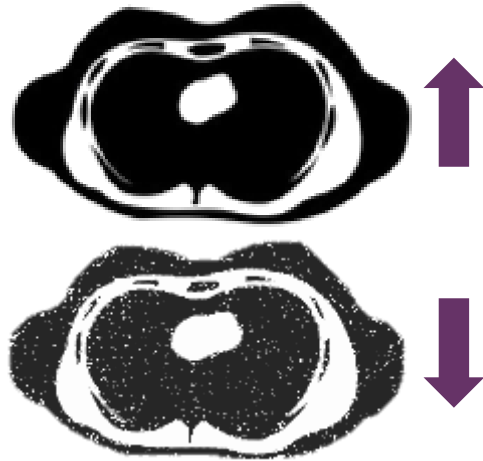




Synthetische  
beelden



peak Signal-to-  
Noise-Ratio (pSNR)



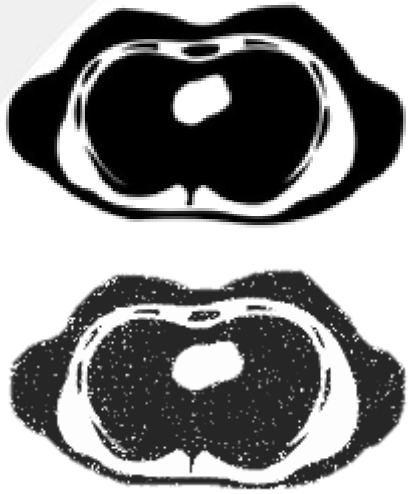
Mean Absolute  
Error (MAE)



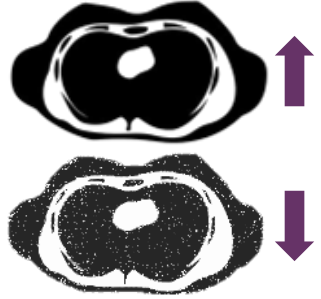
Structural Similarity  
Index Measure (SSIM)



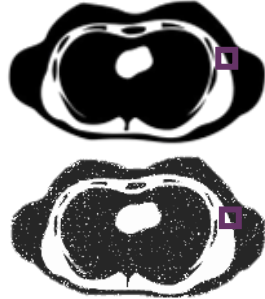
Synthetische  
beelden



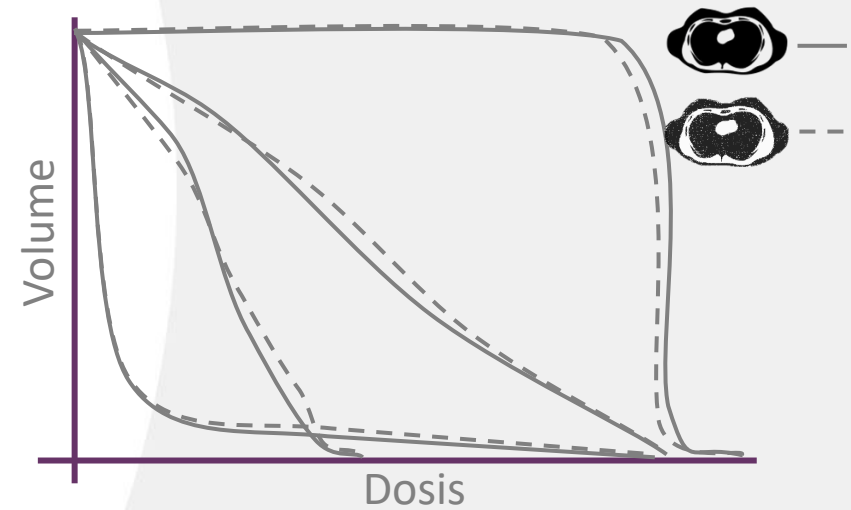
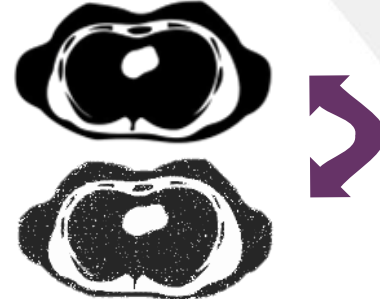
peak Signal-to-  
Noise-Ratio (pSNR)

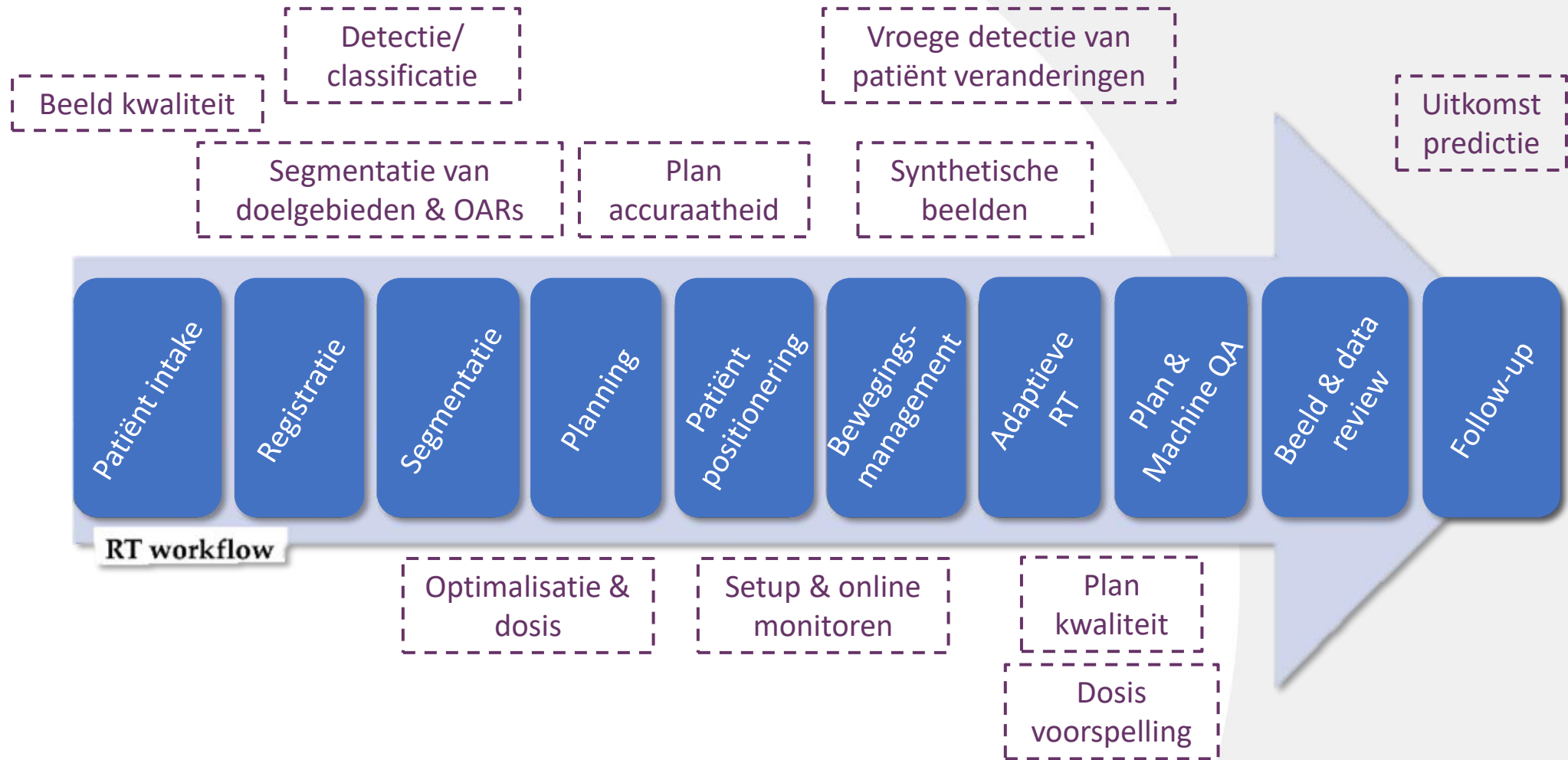


Mean Absolute  
Error (MAE)



Structural Similarity  
Index Measure (SSIM)





**Bedankt!**

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