# Supplementary File

**Table S1.** Patient demographics

| Patient | Age (years) | Stage | Histology | Gleason Score | ADT | VMAT EBRT | EBRT Treatment Start Date |
|---|---|---|---|---|---|---|---|
| 1 | 63 | Not available | High risk prostate adenocarcinoma | 4+4 | Yes | Yes | 31/10/2018 |
| 2 | 79 | T2 | High risk prostate adenocarcinoma | 4+4 | Yes | Yes | 10/05/2019 |
| 3 | 73 | T3aN1M0 | High risk prostate adenocarcinoma | 4+4 | Yes | Yes | 16/05/2019 |
| 4 | 79 | T2c | High risk prostate adenocarcinoma | 3+4 | Yes | Yes | 03/05/2019 |
| 5 | 78 | T4N0M0 | High risk prostate adenocarcinoma | 4+3 | Yes | Yes | 07/06/2019 |
| 6 | 70 | T3N0M0 | High risk prostate adenocarcinoma | 4+3 | Yes | Yes | 17/06/2019 |
| 7 | 80 | T2N0M0 | High risk prostate adenocarcinoma | 3+4 | Yes | Yes | 25/06/2019 |
| 8 | 68 | T1c | Intermediate risk prostate adenocarcinoma | 4+3 | Yes | Yes | 27/06/2019 |
| 9 | 85 | T2N0M0 | High risk prostate adenocarcinoma | 4+4 | Yes | Yes | 01/07/2019 |
| 10 | 78 | T3aN0M0 | High risk prostate adenocarcinoma | 4+3 | Yes | Yes | 25/07/2019 |
| Mean ± SD | 78 ± 6.29 | | | | | | |

**Table S2.** Clinical experience of radiation oncologists

| RO | Designation | Years of Clinical Experience |
|---|---|---|
| Dr A | Associate Consultant | 6 years |
| Dr B | Senior Consultant | 20 years |
| Dr C | Consultant | 6 years |
| Dr D | Senior Consultant | 33 years |
| Dr E | Consultant | 6 years |

**Table S3.** Schedule of contouring tasks

| Contouring | Start Date | End Date | Remarks |
|---|---|---|---|
| CT alone Round 1 | 5/8/19 | 16/8/19 | 1 week break before contouring CT/TPUS Round 1, 2 months in-between before contouring CT alone Round 2 |
| CT/TPUS Round 1 | 26/8/19 | 6/9/19 | 2 months in-between before contouring CT/TPUS Round 2 |
| CT alone Round 2 | 7/10/19 | 18/10/19 | 1 week break before contouring CT/TPUS Round 2 |
| CT/TPUS Round 2 | 28/10/19 | 8/11/19 | |

**Table S4A:** Median centroid position in L/R (x), A/P (y) and S/I (z) directions for each patient as derived from the delineation of the five ROs in CT-alone image sets

| CT-alone Centroid [cm] | | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | | | | | | | y | | | | | | z | | | | | |
| Patient | Dr A | Dr B | Dr C | Dr D | Dr E | Median | Dr A | Dr B | Dr C | Dr D | Dr E | Median | Dr A | Dr B | Dr C | Dr D | Dr E | Median |
| 1 | –0.77 | –0.7 | –0.77 | –0.76 | –0.78 | **–0.77** | 1.24 | 1.17 | 1.31 | 1.45 | 1.34 | **1.31** | –1.33 | –1.41 | –1.24 | –1.22 | –1.25 | **–1.25** |
| 2 | –0.11 | –0.09 | –0.13 | –0.11 | –0.14 | **–0.11** | –0.08 | –0.01 | –0.02 | 0.05 | 0.05 | **–0.01** | –2.93 | –2.85 | –2.77 | –2.98 | –2.88 | **–2.88** |
| 3 | –1.52 | –1.47 | –1.51 | –1.5 | –1.49 | **–1.5** | 0.82 | 1.01 | 0.96 | 1.16 | 1.08 | **1.01** | –0.49 | –0.65 | –0.21 | –0.43 | –0.39 | **–0.43** |
| 4 | –0.06 | –0.04 | –0.05 | –0.03 | –0.02 | **–0.04** | –1.06 | –1.05 | –1.06 | –0.95 | –0.92 | **–1.05** | –0.57 | –0.68 | –0.29 | –0.43 | –0.54 | **–0.54** |
| 5 | –0.02 | 0.01 | –0.07 | –0.03 | –0.02 | **–0.02** | 0.64 | 0.57 | 0.59 | 0.78 | 0.7 | **0.64** | –4.55 | –4.52 | –4.19 | –4.24 | –4.41 | **–4.41** |
| 6 | –0.55 | –0.58 | –0.59 | –0.56 | –0.61 | **–0.58** | 0.47 | 0.34 | 0.28 | 0.57 | 0.42 | **0.42** | –4.25 | –4.4 | –3.92 | –4.27 | –4.2 | **–4.25** |
| 7 | 0.01 | –0.02 | 0.01 | –0.02 | –0.05 | **–0.02** | 0.69 | 0.6 | 0.72 | 0.78 | 0.73 | **0.72** | –4.58 | –4.77 | –4.21 | –4.26 | –4.4 | **–4.4** |
| 8 | 0.52 | 0.56 | 0.54 | 0.51 | 0.49 | **0.52** | 0.96 | 0.91 | 1 | 1.15 | 1.02 | **1** | –3.67 | –3.91 | –3.48 | –3.62 | –3.64 | **–3.64** |
| 9 | –0.03 | –0.05 | –0.14 | –0.03 | –0.11 | **–0.05** | 0.53 | 0.45 | 0.37 | 0.62 | 0.56 | **0.53** | –3.31 | –3.45 | –2.97 | –3.2 | –3.07 | **–3.2** |
| 10 | –0.85 | –0.9 | –0.84 | –0.84 | –0.87 | **–0.85** | 1.34 | 1.27 | 1.18 | 1.35 | 1.35 | **1.34** | –3.73 | –3.86 | –3.61 | –3.45 | –3.73 | **–3.73** |

**Table S4B.** Median centroid position in left-right (x), anterior-posterior (y) and superior-inferior (z) directions for each patient as derived from the delineation of the five ROs in CT/TPUS image sets

| CT/TPUS Centroid [cm] | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | | | | | | | y | | | | | | z | | | | | |
| Patient | Dr A | Dr B | Dr C | Dr D | Dr E | Median | Dr A | Dr B | Dr C | Dr D | Dr E | Median | Dr A | Dr B | Dr C | Dr D | Dr E | Median |
| 1 | −0.78 | −0.75 | −0.79 | −0.73 | −0.83 | **−0.78** | 1.16 | 1.23 | 1.33 | 1.07 | 1.35 | **1.23** | −1.32 | −1.35 | −1.05 | −1.41 | −1.31 | **−1.32** |
| 2 | −0.14 | −0.12 | −0.18 | −0.08 | −0.14 | **−0.14** | −0.05 | 0.03 | −0.04 | 0 | −0.04 | **−0.04** | −2.98 | −2.95 | −2.74 | −3.07 | −2.9 | **−2.95** |
| 3 | −1.51 | −1.54 | −1.56 | −1.5 | −1.49 | **−1.51** | 0.96 | 1.05 | 0.93 | 1.07 | 1 | **1** | −0.52 | −0.5 | −0.18 | −0.52 | −0.53 | **−0.52** |
| 4 | 0.01 | −0.02 | −0.02 | −0.05 | −0.01 | **−0.02** | −1.01 | −1.03 | −1.08 | −0.97 | −1.04 | **−1.03** | −0.6 | −0.66 | −0.31 | −0.59 | −0.5 | **−0.59** |
| 5 | −0.01 | −0.04 | −0.1 | 0.02 | −0.03 | **−0.03** | 0.56 | 0.7 | 0.67 | 0.67 | 0.69 | **0.67** | −4.59 | −4.52 | −4.31 | −4.4 | −4.35 | **−4.4** |
| 6 | −0.55 | −0.46 | −0.53 | −0.63 | −0.58 | **−0.55** | 0.35 | 0.46 | 0.42 | 0.5 | 0.43 | **0.43** | −4.41 | −4.55 | −4.28 | −4.57 | −4.31 | **−4.41** |
| 7 | 0.04 | 0.03 | −0.03 | 0.01 | −0.03 | **0.01** | 0.62 | 0.56 | 0.61 | 0.59 | 0.69 | **0.61** | −4.53 | −4.6 | −4.45 | −4.58 | −4.49 | **−4.53** |
| 8 | 0.51 | 0.56 | 0.52 | 0.55 | 0.53 | **0.53** | 0.98 | 1.05 | 0.88 | 1.06 | 0.91 | **0.98** | −3.65 | −3.67 | −3.45 | −3.55 | −3.64 | **−3.64** |
| 9 | −0.01 | 0.12 | −0.06 | 0.1 | −0.06 | **−0.01** | 0.57 | 0.76 | 0.5 | 0.68 | 0.6 | **0.6** | −3.24 | −3.5 | −2.99 | −3.44 | −3.08 | **−3.24** |
| 10 | −0.9 | −0.84 | −0.83 | −0.82 | −0.9 | **−0.84** | 1.33 | 1.42 | 1.25 | 1.41 | 1.42 | **1.41** | −3.91 | −3.86 | −3.55 | −3.87 | −3.78 | **−3.86** |

**Table S4C:** Observed difference in prostate centroid position in left-right (x), anterior-posterior (y) and superior-inferior (z) directions between the two modalities — CT-alone and CT/TPUS

| Prostate Centroid Differences [cm] | | |
|---|---|---|
| x | y | z |
| –0.01 | –0.08 | –0.07 |
| –0.03 | –0.03 | –0.07 |
| –0.01 | –0.01 | –0.09 |
| 0.02 | 0.02 | –0.05 |
| –0.01 | 0.03 | 0.01 |
| 0.03 | 0.01 | –0.16 |
| 0.03 | –0.11 | –0.13 |
| 0.01 | –0.02 | 0 |
| 0.04 | 0.07 | –0.04 |
| 0.01 | 0.07 | –0.13 |
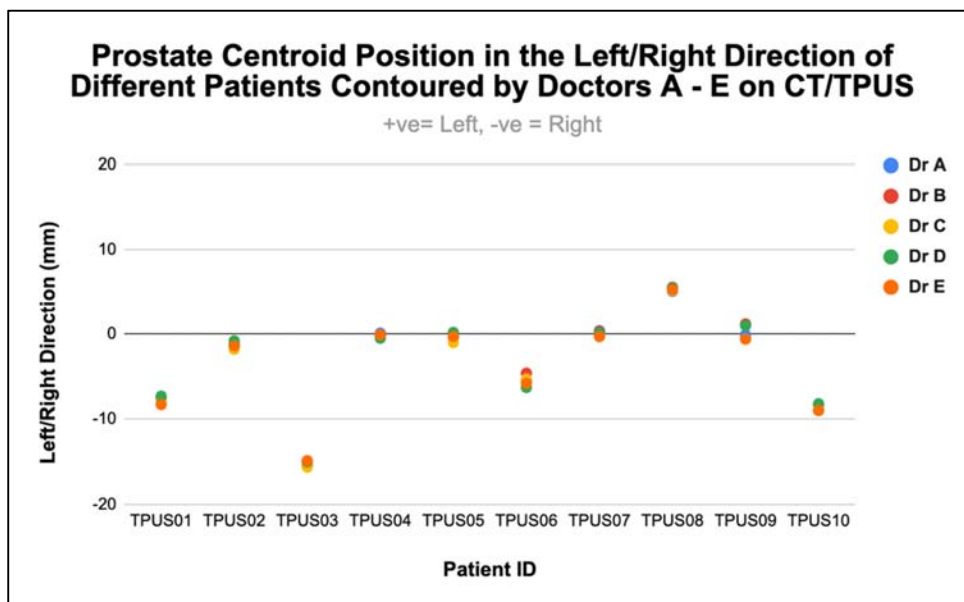


*Fig. S1A*
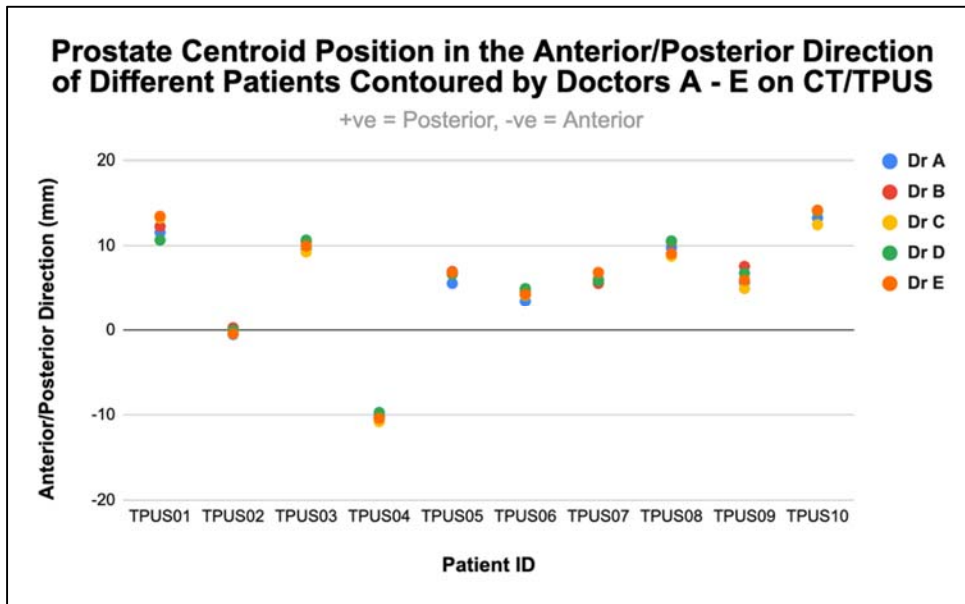
**Fig. S1B**
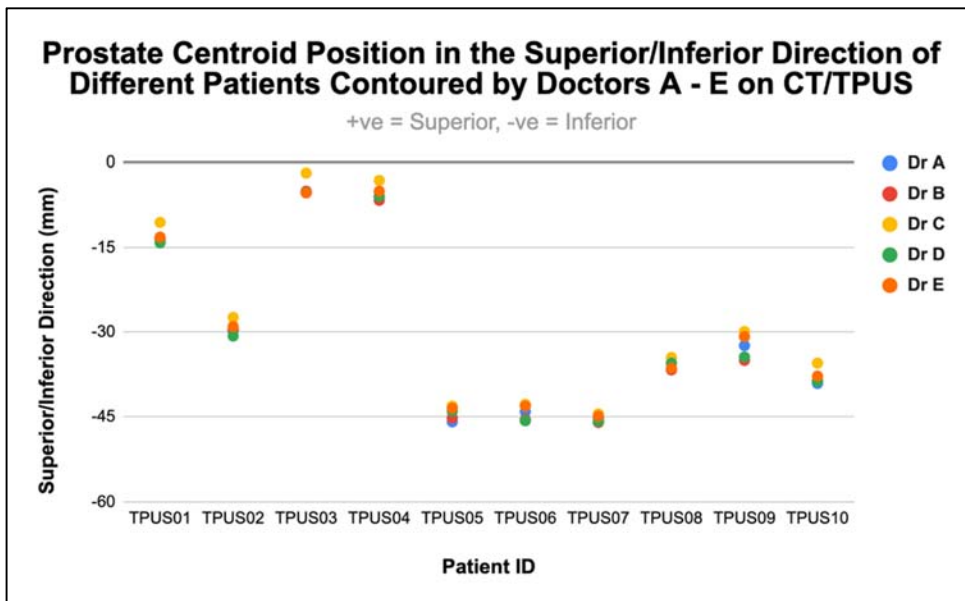


**Fig. S1C**

**Figure S1. A.** Delineated prostate centroid position in left/right direction of each patient by Doctors A–E on CT/TPUS; **B.** Delineated prostate centroid position in anterior/posterior direction of each patient by Doctors A–E on CT/TPUS; **C.** Delineated prostate centroid position in superior/inferior direction of each patient by Doctors A–E on CT/TPUS
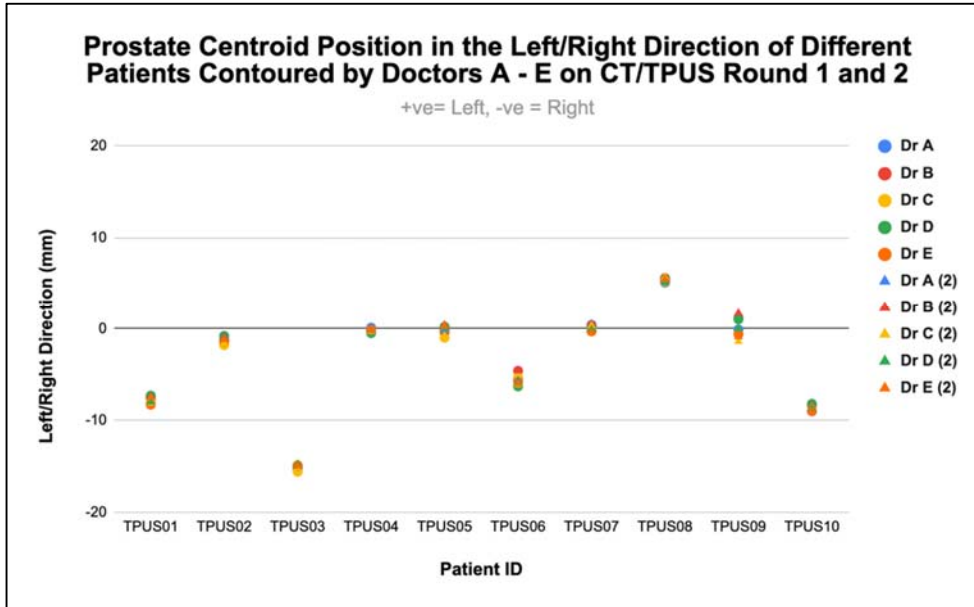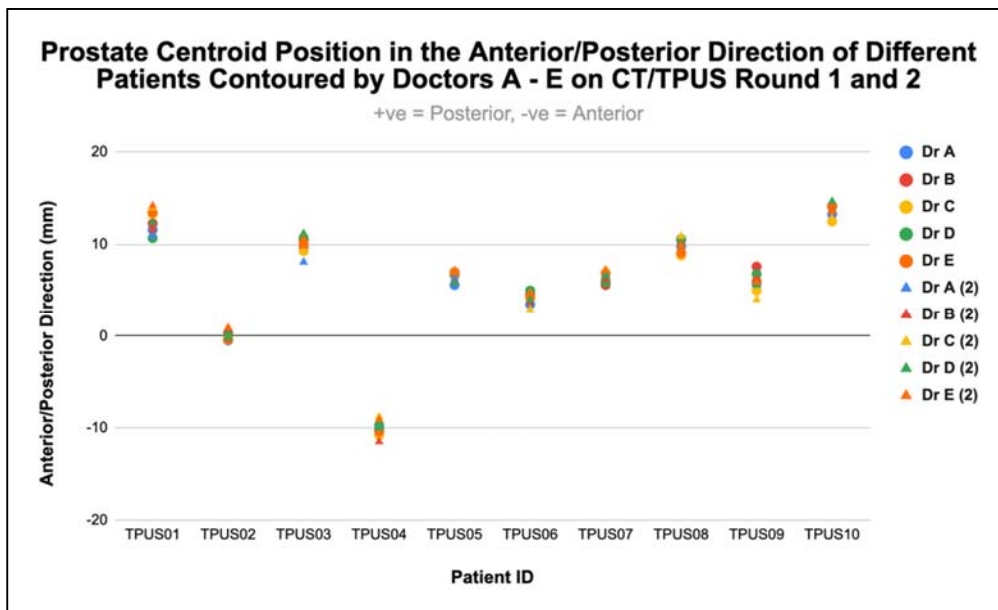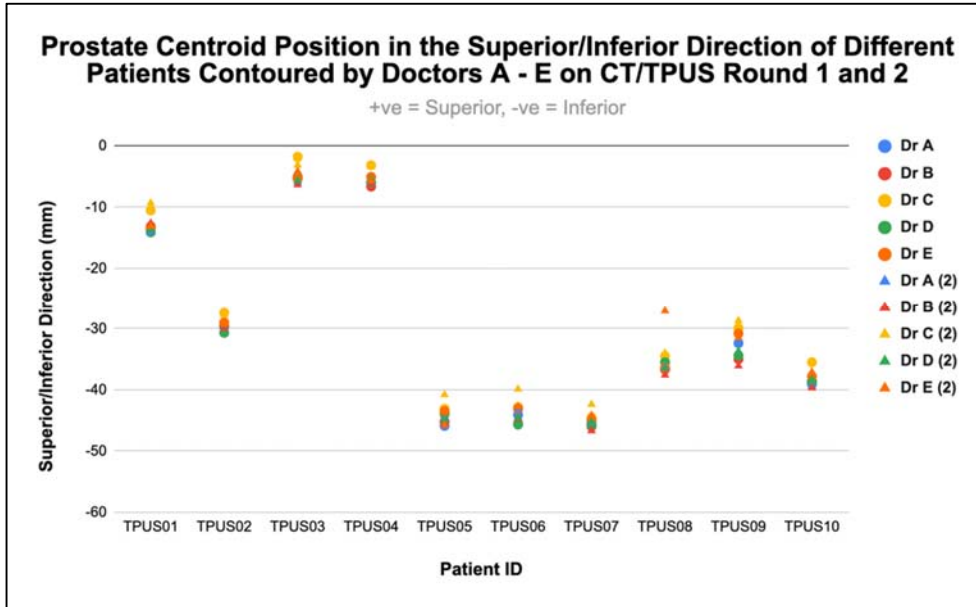
**Fig. S2A**



**Fig. S2B**

*Fig. S2C*

**Figure S2. A.** Delineated prostate centroid position in the L/R direction of each patient by Doctors A–E on CT/TPUS in rounds 1 and 2; **B.** Delineated prostate centroid position in the A/P direction of each patient by Doctors A–E on CT/TPUS in rounds 1 and 2; **C.** Delineated prostate centroid position in the superior/inferior direction of each patient by Doctors A–E on CT/TPUS in rounds 1 and 2.