

**Supplemental Table 1**

Study #	Prostate D <sub>90</sub> (%)	Prostate V <sub>100</sub> (%)	Prostate V <sub>150</sub> (%)	Prostate V <sub>200</sub> (%)	Prostate D <sub>10</sub> (%)	Urethra V <sub>125</sub> (%)	Urethra V <sub>100</sub> (%)	Urethra V <sub>90</sub> (%)	Rectum V <sub>80</sub> (cm <sup>3</sup> )	Rectum D <sub>2cc</sub> (%)	Bladder D <sub>1cc</sub> (cGy)	Bladder D <sub>1cc</sub> (%)	Bladder D <sub>90</sub> (%)	GTV1 V <sub>100</sub> (%)	GTV1 V <sub>150</sub> (%)	GTV1 V <sub>200</sub> (%)	GTV1 D <sub>90</sub> (%)	GTV2 V <sub>100</sub> (%)	GTV2 V <sub>150</sub> (%)	GTV2 V <sub>200</sub> (%)	GTV3 V <sub>100</sub> (%)	GTV3 V <sub>150</sub> (%)	GTV3 V <sub>200</sub> (%)	
Original	92.63	84.18	33.81	13.2	112.31	0	0.18	74.38	1062.25	70.82	112.05	99.48	19.11	1.01	113.56	99.91	50.21	12.98						
<b>Reoptimized</b>	<b>95.01</b>	<b>86.12</b>	<b>31.1</b>	<b>13.08</b>	<b>110.44</b>	<b>0</b>	<b>0.16</b>	<b>64.85</b>	<b>883.81</b>	<b>58.92</b>	<b>138.45</b>	<b>100</b>	<b>58.64</b>	<b>11.21</b>	<b>132.09</b>	<b>100</b>	<b>65.28</b>	<b>6.37</b>						
Original	92.34	86.43	37.05	17.63	128.2	16.74	1.93	101.24			164.03	100	96.77	53.19										
<b>Reoptimized</b>	<b>94</b>	<b>86.88</b>	<b>36.17</b>	<b>19.06</b>	<b>125.45</b>	<b>12.04</b>	<b>1.03</b>	<b>88.13</b>			<b>165.33</b>	<b>100</b>	<b>95.53</b>	<b>62.48</b>										
Original	104.54	92.7	43.72	18.87	115.64	0.49	0.28	74.62			96.42	84.99	11.35	2.13										
<b>Reoptimized</b>	<b>101.26</b>	<b>90.86</b>	<b>36.8</b>	<b>15.53</b>	<b>109.22</b>	<b>0</b>	<b>0.41</b>	<b>67.15</b>			<b>143.94</b>	<b>100</b>	<b>83.12</b>	<b>41.96</b>										
Original	97.34	88.3	37.05	17.34	130.61	27.12	0.03	62.72	813.05	54.2	138.61	100	81.07	47.86										
<b>Reoptimized</b>	<b>98.45</b>	<b>89.12</b>	<b>36.23</b>	<b>16.31</b>	<b>125.08</b>	<b>10.11</b>	<b>0.29</b>	<b>73.64</b>	<b>845.54</b>	<b>56.37</b>	<b>154.85</b>	<b>100</b>	<b>92.23</b>	<b>59.9</b>										
Original	114.1	96.38	53.58	21.94	123.7	5.29	1.38	90.9	1105.64	73.71	143.78	100	85.91	34.15										
<b>Reoptimized</b>	<b>106.88</b>	<b>94.68</b>	<b>32.64</b>	<b>14.14</b>	<b>122.59</b>	<b>6.31</b>	<b>0.81</b>	<b>84.83</b>	<b>1112.61</b>	<b>74.17</b>	<b>153.46</b>	<b>100</b>	<b>92.25</b>	<b>47.48</b>										
Original	106.38	94.08	37.04	14.42	115.97	0	0.48	80.12	865.27	57.68	68.33	53.26	11.12	4										
<b>Reoptimized</b>	<b>102.34</b>	<b>91.89</b>	<b>34.28</b>	<b>15.94</b>	<b>115.56</b>	<b>0.08</b>	<b>0.34</b>	<b>77.9</b>	<b>828.14</b>	<b>55.21</b>	<b>139.68</b>	<b>99.83</b>	<b>83.74</b>	<b>46.29</b>										
Original	111.36	97.41	39.5	15.6	123.48	7.57	0.29	61.22	1134.74	75.65	110.78	96.37	56.09	19.4	117.27	100	0.12	0						
<b>Reoptimized</b>	<b>100.59</b>	<b>90.86</b>	<b>29.42</b>	<b>13.37</b>	<b>117.29</b>	<b>1.18</b>	<b>0.41</b>	<b>62.71</b>	<b>791.24</b>	<b>52.75</b>	<b>112.76</b>	<b>96.33</b>	<b>58</b>	<b>22.37</b>	<b>141.52</b>	<b>100</b>	<b>71.61</b>	<b>13.21</b>						
Original	113.88	96.58	47.54	20.35	121.45	1.07	0.46	66.75	1556.5	103.77	128.86	100	62.62	10.5	151.94	100	91.37	28.77						
<b>Reoptimized</b>	<b>108.49</b>	<b>95.96</b>	<b>41.89</b>	<b>17.62</b>	<b>120.45</b>	<b>3.67</b>	<b>0.11</b>	<b>72.94</b>	<b>1304.71</b>	<b>86.98</b>	<b>128.63</b>	<b>100</b>	<b>68.89</b>	<b>16.79</b>	<b>149.92</b>	<b>100</b>	<b>89.98</b>	<b>45.73</b>						
Original	124.15	98.36	58.26	22.38	131.01	57.29	0.1	69.81	1296.75	86.45	165.31	100	97.7	50.08	138.4	100	78.03	24.45						
<b>Reoptimized</b>	<b>113.63</b>	<b>97.07</b>	<b>41.76</b>	<b>15.14</b>	<b>118.02</b>	<b>0.13</b>	<b>0.29</b>	<b>72.53</b>	<b>1210.36</b>	<b>80.69</b>	<b>189.33</b>	<b>100</b>	<b>100</b>	<b>73.9</b>	<b>162.42</b>	<b>100</b>	<b>97.82</b>	<b>39.8</b>						
Original	96.25	88.09	40.86	18.53	141.9	31.01	0.2	73.54	1086.85	72.46	143.7	100	81.21	13.68	120.21	100	46.52	17.42						
<b>Reoptimized</b>	<b>97.32</b>	<b>88.27</b>	<b>31.77</b>	<b>14.8</b>	<b>117.37</b>	<b>0.79</b>	<b>0.36</b>	<b>62.54</b>	<b>842.82</b>	<b>56.19</b>	<b>163.98</b>	<b>100</b>	<b>98.04</b>	<b>34.63</b>	<b>147.92</b>	<b>100</b>	<b>87.18</b>	<b>21.89</b>						
Original	104.78	92.67	53.58	24.22	142.3	63.78	1.59	88.46	838.49	55.9	203.37	100	99.93	91.08										
<b>Reoptimized</b>	<b>104.86</b>	<b>93.07</b>	<b>40.41</b>	<b>17.43</b>	<b>129.55</b>	<b>26.88</b>	<b>1.22</b>	<b>86.07</b>	<b>1001.27</b>	<b>66.75</b>	<b>194.17</b>	<b>100</b>	<b>100</b>	<b>87.26</b>										
Original	116.02	98.36	44.44	13.17	121.75	1.73	0.02	68.9			160.44	100	95.29	49.83										
<b>Reoptimized</b>	<b>110.26</b>	<b>97.71</b>	<b>32.7</b>	<b>10.77</b>	<b>117.98</b>	<b>1.87</b>	<b>0.05</b>	<b>68.52</b>			<b>184.48</b>	<b>100</b>	<b>100</b>	<b>53.78</b>										
Original	109.83	95.51	41.29	17.46	120.09	0.24	0.13	70.84	1186.99	79.13	150.15	100	90.55	24.49										
<b>Reoptimized</b>	<b>105.38</b>	<b>94.13</b>	<b>31.99</b>	<b>14</b>	<b>113.43</b>	<b>0.57</b>	<b>0.43</b>	<b>76.68</b>	<b>1067.94</b>	<b>71.2</b>	<b>183.98</b>	<b>100</b>	<b>99.98</b>	<b>61.75</b>										

**Supplemental Table 1. Cont.**

Study #	Prostate D <sub>90</sub> (%)	Prostate V <sub>100</sub> (%)	Prostate V <sub>150</sub> (%)	Prostate V <sub>200</sub> (%)	Urethra D <sub>10</sub> (%)	Urethra V <sub>125</sub> (%)	Rectum V <sub>60</sub> (cm <sup>3</sup> )	Rectum D <sub>2cc</sub> (%)	Bladder D <sub>1cc</sub> (cGy)	Bladder D <sub>1cc</sub> (%)	GTV1 D <sub>90</sub> (%)	GTV1 V <sub>100</sub> (%)	GTV1 V <sub>150</sub> (%)	GTV1 V <sub>200</sub> (%)	GTV2 D <sub>90</sub> (%)	GTV2 V <sub>100</sub> (%)	GTV2 V <sub>150</sub> (%)	GTV2 V <sub>200</sub> (%)	GTV3 D <sub>90</sub> (%)	GTV3 V <sub>100</sub> (%)	GTV3 V <sub>150</sub> (%)	GTV3 V <sub>200</sub> (%)	
Original	96.42	87.53	31.06	10.84	115.89	0	0.08	61.23	1680.38	112.03	98.6	87.55	3.64	0									
<b>Reoptimized</b>	<b>101.37</b>	<b>91.09</b>	<b>32.04</b>	<b>13.17</b>	<b>115.91</b>	<b>0.35</b>	<b>0.44</b>	<b>76.04</b>	<b>1600.54</b>	<b>106.7</b>	<b>151.56</b>	<b>100</b>	<b>91.93</b>	<b>39.91</b>									
Original	108.69	94.17	35.16	12.78	114.28	0	0.1	73.35	759.39	50.63	109.92	98.31	36.08	4.82	164.77	100	98.55	60.19	112.06	100	0	0	0
<b>Reoptimized</b>	<b>101.93</b>	<b>91.38</b>	<b>27.66</b>	<b>11.81</b>	<b>115.02</b>	<b>0.08</b>	<b>0.42</b>	<b>78.14</b>	<b>762.11</b>	<b>50.81</b>	<b>130.51</b>	<b>100</b>	<b>66.55</b>	<b>17.61</b>	<b>162.84</b>	<b>100</b>	<b>99.39</b>	<b>59.41</b>	<b>144.71</b>	<b>100</b>	<b>33.43</b>	<b>0</b>	<b>0</b>
Original	111.23	96.53	40.64	15.35	118.44	1.37	0.26	75.5	688.54	45.9	133.87	98.31	81.2	39.98									
<b>Reoptimized</b>	<b>100.79</b>	<b>90.84</b>	<b>26.93</b>	<b>11.03</b>	<b>115.03</b>	<b>2.95</b>	<b>0.35</b>	<b>77.83</b>	<b>674.08</b>	<b>44.94</b>	<b>151.89</b>	<b>100</b>	<b>90.31</b>	<b>57.65</b>									
Original	111.19	97.09	37.84	13.49	123.25	5.9	0.51	78.8			138.05	100	72.22	23.81									
<b>Reoptimized</b>	<b>101.93</b>	<b>92.56</b>	<b>23.91</b>	<b>8.64</b>	<b>116.66</b>	<b>1.48</b>	<b>0.43</b>	<b>77.57</b>			<b>147.32</b>	<b>100</b>	<b>87.9</b>	<b>40.01</b>									
Original	110.58	96.9	40.88	13.03	112.76	0	0.35	76.23	1530.84	102.06	175.19	100	97	81.49									
<b>Reoptimized</b>	<b>101</b>	<b>91.49</b>	<b>25.12</b>	<b>8.77</b>	<b>111.3</b>	<b>0</b>	<b>0.16</b>	<b>72.82</b>	<b>1525.09</b>	<b>101.67</b>	<b>208.22</b>	<b>100</b>	<b>99.99</b>	<b>92.77</b>									
Original	114.68	96.35	51.02	20.04	137.24	56.38	0.82	82.3	1188	79.2	152.29	100	92.52	28.53									
<b>Reoptimized</b>	<b>100.01</b>	<b>90.05</b>	<b>29.7</b>	<b>13.67</b>	<b>115</b>	<b>1.2</b>	<b>0.42</b>	<b>64.88</b>	<b>768.81</b>	<b>51.25</b>	<b>168.47</b>	<b>100</b>	<b>99.53</b>	<b>58.05</b>									
Original	110.67	96.6	48.46	22.61	120	3.02	0.55	81.31	712.05	47.47	118.41	100	39.24	12.65									
<b>Reoptimized</b>	<b>100.87</b>	<b>90.68</b>	<b>31.64</b>	<b>12.71</b>	<b>115.19</b>	<b>0</b>	<b>0.38</b>	<b>77.17</b>	<b>652.35</b>	<b>43.49</b>	<b>139.73</b>	<b>100</b>	<b>79.5</b>	<b>38.02</b>									
Original	98.44	89.16	41.55	18.34	121.25	2.9	1.45	88.62	1494.78	99.65	115.58	97.31	69.94	39.01									
<b>Reoptimized</b>	<b>100.11</b>	<b>90.26</b>	<b>27.94</b>	<b>12.95</b>	<b>115.67</b>	<b>0.76</b>	<b>0.46</b>	<b>77.55</b>	<b>1314.29</b>	<b>87.62</b>	<b>131.28</b>	<b>100</b>	<b>80.07</b>	<b>48.82</b>									
Original	103.29	91.61	54.64	30.5	133.61	44.17	1.59	87.26	702.63	46.84	142.36	100	67.11	5.99									
<b>Reoptimized</b>	<b>101.43</b>	<b>90.77</b>	<b>43.06</b>	<b>22.44</b>	<b>127.88</b>	<b>18.59</b>	<b>1.58</b>	<b>87.64</b>	<b>776.73</b>	<b>51.78</b>	<b>151.98</b>	<b>100</b>	<b>93.8</b>	<b>9.68</b>									
Original	110.54	95.17	54.74	28.92	127.91	23.68	0.03	70.34			124.74	100	71.8	41.56									
<b>Reoptimized</b>	<b>100.75</b>	<b>90.58</b>	<b>35.63</b>	<b>14.4</b>	<b>116.24</b>	<b>0.35</b>	<b>0.15</b>	<b>71.68</b>			<b>143.77</b>	<b>100</b>	<b>84.74</b>	<b>47.47</b>									
Original	104.63	92.84	50.53	25.78	120.12	2.25	0.33	77.77	825.28	55.02	146.4	100	85.82	12.8									
<b>Reoptimized</b>	<b>100.56</b>	<b>90.44</b>	<b>39.71</b>	<b>17.41</b>	<b>117.24</b>	<b>0.25</b>	<b>0.44</b>	<b>79.57</b>	<b>751.25</b>	<b>50.08</b>	<b>172.61</b>	<b>100</b>	<b>99.95</b>	<b>43.61</b>									