



**Figure S1** Multivariate Cox proportional hazards model of overall survival based on subgroups in the SEER cohort. SEER, Surveillance, Epidemiology, and End Results; ELN, examined lymph node; HR, hazard ratio; CI, confidence interval.

**Table S1** Details of examined lymph nodes in the SEER cohort

| Subgroup              | Total ELNs  | <12 ELNs (n=18,533) | 12–23 ELNs (n=43,724) | 24+ ELNs (n=18,535) | P      |
|-----------------------|-------------|---------------------|-----------------------|---------------------|--------|
| <b>Tumor location</b> |             |                     |                       |                     |        |
| Cecum                 | 19.6 (11.7) | 3,060 (17.1%)       | 10,359 (57.9%)        | 4,473 (25.0%)       | <0.001 |
| Ascending colon       | 20.6 (11.7) | 2,416 (14.7%)       | 9,205 (56.0%)         | 4,816 (29.3%)       |        |
| Hepatic flexure       | 20.9 (12.6) | 692 (16.5%)         | 2,255 (53.8%)         | 1,244 (29.7%)       |        |
| Transverse colon      | 19.2 (13.5) | 2,020 (24.8%)       | 4,122 (50.6%)         | 2,004 (24.6%)       |        |
| Splenic flexure       | 17.8 (12.7) | 880 (28.0%)         | 1,644 (52.3%)         | 619 (19.7%)         |        |
| Descending colon      | 17.9 (12.7) | 1,599 (28.1%)       | 2,938 (51.6%)         | 1,156 (20.3%)       |        |
| Sigmoid colon         | 16.7 (11.8) | 7,866 (31.1%)       | 13,201 (52.2%)        | 4,223 (16.7%)       |        |
| <b>Age (years)</b>    |             |                     |                       |                     |        |
| <50                   | 22.5 (14.7) | 1,446 (15.6%)       | 4,635 (49.9%)         | 3,207 (34.5%)       | <0.001 |
| 50–69                 | 18.6 (11.9) | 10,453 (22.9%)      | 24,879 (54.5%)        | 10,305 (22.6%)      |        |
| 70+                   | 17.6 (11.4) | 6,634 (25.6%)       | 14,210 (54.9%)        | 5,023 (19.4%)       |        |
| <b>Gender</b>         |             |                     |                       |                     |        |
| Female                | 19.0 (12.0) | 8,377 (21.7%)       | 21,031 (54.6%)        | 9,138 (23.7%)       | <0.001 |
| Male                  | 18.5 (12.3) | 10,156 (24.0%)      | 22,693 (53.7%)        | 9,397 (22.3%)       |        |

Data are mean (standard deviation) or number (%). SEER, Surveillance, Epidemiology, and End Results; ELN, examined lymph node.

**Table S2** Bootstrap CIs for all the estimations of different lymph node numbers

| Site       | T  | N  | NSS (%) | 95% CI    | Site        | T  | N  | NSS (%) | 95% CI    |
|------------|----|----|---------|-----------|-------------|----|----|---------|-----------|
| Left colon | T1 | 2  | 83.9    | 83.7–84.1 | Right colon | T1 | 2  | 89.6    | 89.4–89.8 |
| Left colon | T1 | 3  | 85.7    | 85.5–85.9 | Right colon | T1 | 3  | 90.7    | 90.5–90.9 |
| Left colon | T1 | 4  | 87.2    | 87–87.4   | Right colon | T1 | 4  | 91.7    | 91.4–91.8 |
| Left colon | T1 | 5  | 88.6    | 88.3–88.8 | Right colon | T1 | 5  | 92.5    | 92.3–92.7 |
| Left colon | T1 | 6  | 89.7    | 89.4–89.9 | Right colon | T1 | 6  | 93.2    | 93–93.4   |
| Left colon | T1 | 7  | 90.7    | 90.4–91   | Right colon | T1 | 7  | 93.8    | 93.6–94   |
| Left colon | T1 | 8  | 91.6    | 91.3–91.9 | Right colon | T1 | 8  | 94.4    | 94.1–94.6 |
| Left colon | T1 | 9  | 92.4    | 92–92.6   | Right colon | T1 | 9  | 94.9    | 94.6–95.1 |
| Left colon | T1 | 10 | 93.1    | 92.7–93.3 | Right colon | T1 | 10 | 95.3    | 95–95.5   |
| Left colon | T1 | 11 | 93.7    | 93.3–94   | Right colon | T1 | 11 | 95.7    | 95.4–95.9 |
| Left colon | T1 | 12 | 94.2    | 93.8–94.5 | Right colon | T1 | 12 | 96      | 95.7–96.3 |
| Left colon | T1 | 13 | 94.7    | 94.3–95   | Right colon | T1 | 13 | 96.3    | 96–96.6   |
| Left colon | T1 | 14 | 95.1    | 94.7–95.4 | Right colon | T1 | 14 | 96.6    | 96.3–96.9 |
| Left colon | T1 | 15 | 95.5    | 95.1–95.8 | Right colon | T1 | 15 | 96.8    | 96.5–97.1 |
| Left colon | T1 | 16 | 95.8    | 95.4–96.1 | Right colon | T1 | 16 | 97.1    | 96.7–97.3 |
| Left colon | T1 | 17 | 96.1    | 95.7–96.4 | Right colon | T1 | 17 | 97.3    | 96.9–97.5 |
| Left colon | T1 | 18 | 96.4    | 96–96.7   | Right colon | T1 | 18 | 97.4    | 97.1–97.7 |
| Left colon | T1 | 19 | 96.6    | 96.3–97   | Right colon | T1 | 19 | 97.6    | 97.3–97.9 |
| Left colon | T1 | 20 | 96.9    | 96.5–97.2 | Right colon | T1 | 20 | 97.8    | 97.4–98   |
| Left colon | T1 | 21 | 97.1    | 96.7–97.4 | Right colon | T1 | 21 | 97.9    | 97.6–98.1 |
| Left colon | T1 | 22 | 97.3    | 96.9–97.6 | Right colon | T1 | 22 | 98      | 97.7–98.3 |
| Left colon | T1 | 23 | 97.4    | 97.1–97.7 | Right colon | T1 | 23 | 98.1    | 97.8–98.4 |
| Left colon | T1 | 24 | 97.6    | 97.2–97.9 | Right colon | T1 | 24 | 98.2    | 97.9–98.5 |
| Left colon | T1 | 25 | 97.7    | 97.4–98   | Right colon | T1 | 25 | 98.3    | 98–98.6   |
| Left colon | T1 | 26 | 97.9    | 97.5–98.2 | Right colon | T1 | 26 | 98.4    | 98.1–98.7 |
| Left colon | T1 | 27 | 98      | 97.7–98.3 | Right colon | T1 | 27 | 98.5    | 98.2–98.7 |
| Left colon | T1 | 28 | 98.1    | 97.8–98.4 | Right colon | T1 | 28 | 98.6    | 98.3–98.8 |
| Left colon | T1 | 29 | 98.2    | 97.9–98.5 | Right colon | T1 | 29 | 98.7    | 98.4–98.9 |
| Left colon | T1 | 30 | 98.3    | 98–98.6   | Right colon | T1 | 30 | 98.7    | 98.4–99   |
| Left colon | T1 | 31 | 98.4    | 98.1–98.7 | Right colon | T1 | 31 | 98.8    | 98.5–99   |
| Left colon | T1 | 32 | 98.5    | 98.2–98.7 | Right colon | T1 | 32 | 98.8    | 98.6–99.1 |
| Left colon | T1 | 33 | 98.6    | 98.3–98.8 | Right colon | T1 | 33 | 98.9    | 98.6–99.1 |
| Left colon | T1 | 34 | 98.6    | 98.3–98.9 | Right colon | T1 | 34 | 98.9    | 98.7–99.2 |
| Left colon | T1 | 35 | 98.7    | 98.4–98.9 | Right colon | T1 | 35 | 99      | 98.7–99.2 |
| Left colon | T1 | 36 | 98.8    | 98.5–99   | Right colon | T1 | 36 | 99      | 98.8–99.2 |

Table S2 (continued)

Table S2 (continued)

| Site       | T  | N  | NSS (%) | 95% CI    | Site        | T  | N  | NSS (%) | 95% CI    |
|------------|----|----|---------|-----------|-------------|----|----|---------|-----------|
| Left colon | T1 | 37 | 98.8    | 98.5–99.1 | Right colon | T1 | 37 | 99.1    | 98.8–99.3 |
| Left colon | T1 | 38 | 98.9    | 98.6–99.1 | Right colon | T1 | 38 | 99.1    | 98.9–99.3 |
| Left colon | T1 | 39 | 98.9    | 98.7–99.2 | Right colon | T1 | 39 | 99.2    | 98.9–99.4 |
| Left colon | T1 | 40 | 99      | 98.7–99.2 | Right colon | T1 | 40 | 99.2    | 98.9–99.4 |
| Left colon | T2 | 2  | 74.7    | 73.7–75.4 | Right colon | T2 | 2  | 82.4    | 81.5–83   |
| Left colon | T2 | 3  | 77.5    | 76.4–78.2 | Right colon | T2 | 3  | 84.3    | 83.4–84.9 |
| Left colon | T2 | 4  | 79.9    | 78.7–80.6 | Right colon | T2 | 4  | 86      | 85–86.6   |
| Left colon | T2 | 5  | 81.9    | 80.6–82.8 | Right colon | T2 | 5  | 87.4    | 86.3–88   |
| Left colon | T2 | 6  | 83.7    | 82.3–84.6 | Right colon | T2 | 6  | 88.6    | 87.5–89.3 |
| Left colon | T2 | 7  | 85.3    | 83.8–86.3 | Right colon | T2 | 7  | 89.7    | 88.5–90.4 |
| Left colon | T2 | 8  | 86.7    | 85.1–87.7 | Right colon | T2 | 8  | 90.6    | 89.4–91.4 |
| Left colon | T2 | 9  | 87.9    | 86.3–88.9 | Right colon | T2 | 9  | 91.4    | 90.1–92.2 |
| Left colon | T2 | 10 | 88.9    | 87.3–90.1 | Right colon | T2 | 10 | 92.1    | 90.8–93   |
| Left colon | T2 | 11 | 89.9    | 88.2–91   | Right colon | T2 | 11 | 92.7    | 91.4–93.6 |
| Left colon | T2 | 12 | 90.7    | 89–91.9   | Right colon | T2 | 12 | 93.3    | 91.9–94.2 |
| Left colon | T2 | 13 | 91.5    | 89.7–92.7 | Right colon | T2 | 13 | 93.8    | 92.4–94.7 |
| Left colon | T2 | 14 | 92.1    | 90.4–93.3 | Right colon | T2 | 14 | 94.3    | 92.9–95.2 |
| Left colon | T2 | 15 | 92.7    | 91–93.9   | Right colon | T2 | 15 | 94.7    | 93.3–95.6 |
| Left colon | T2 | 16 | 93.3    | 91.5–94.5 | Right colon | T2 | 16 | 95      | 93.6–96   |
| Left colon | T2 | 17 | 93.7    | 92–94.9   | Right colon | T2 | 17 | 95.4    | 94–96.3   |
| Left colon | T2 | 18 | 94.2    | 92.4–95.4 | Right colon | T2 | 18 | 95.7    | 94.3–96.6 |
| Left colon | T2 | 19 | 94.6    | 92.8–95.8 | Right colon | T2 | 19 | 95.9    | 94.5–96.9 |
| Left colon | T2 | 20 | 94.9    | 93.2–96.1 | Right colon | T2 | 20 | 96.2    | 94.8–97.1 |
| Left colon | T2 | 21 | 95.3    | 93.5–96.4 | Right colon | T2 | 21 | 96.4    | 95–97.3   |
| Left colon | T2 | 22 | 95.6    | 93.9–96.7 | Right colon | T2 | 22 | 96.6    | 95.2–97.5 |
| Left colon | T2 | 23 | 95.8    | 94.1–96.9 | Right colon | T2 | 23 | 96.8    | 95.4–97.7 |
| Left colon | T2 | 24 | 96.1    | 94.4–97.2 | Right colon | T2 | 24 | 97      | 95.6–97.8 |
| Left colon | T2 | 25 | 96.3    | 94.7–97.4 | Right colon | T2 | 25 | 97.1    | 95.8–98   |
| Left colon | T2 | 26 | 96.5    | 94.9–97.6 | Right colon | T2 | 26 | 97.3    | 96–98.1   |
| Left colon | T2 | 27 | 96.7    | 95.1–97.7 | Right colon | T2 | 27 | 97.4    | 96.1–98.3 |
| Left colon | T2 | 28 | 96.9    | 95.3–97.9 | Right colon | T2 | 28 | 97.6    | 96.3–98.4 |
| Left colon | T2 | 29 | 97.1    | 95.5–98   | Right colon | T2 | 29 | 97.7    | 96.4–98.5 |
| Left colon | T2 | 30 | 97.2    | 95.7–98.2 | Right colon | T2 | 30 | 97.8    | 96.5–98.6 |
| Left colon | T2 | 31 | 97.4    | 95.9–98.3 | Right colon | T2 | 31 | 97.9    | 96.6–98.7 |
| Left colon | T2 | 32 | 97.5    | 96–98.4   | Right colon | T2 | 32 | 98      | 96.8–98.7 |

Table S2 (continued)

Table S2 (continued)

| Site       | T  | N  | NSS (%) | 95% CI    | Site        | T  | N  | NSS (%) | 95% CI    |
|------------|----|----|---------|-----------|-------------|----|----|---------|-----------|
| Left colon | T2 | 33 | 97.6    | 96.2–98.5 | Right colon | T2 | 33 | 98.1    | 96.9–98.8 |
| Left colon | T2 | 34 | 97.7    | 96.3–98.6 | Right colon | T2 | 34 | 98.2    | 97–98.9   |
| Left colon | T2 | 35 | 97.8    | 96.4–98.7 | Right colon | T2 | 35 | 98.2    | 97.1–98.9 |
| Left colon | T2 | 36 | 97.9    | 96.6–98.8 | Right colon | T2 | 36 | 98.3    | 97.1–99   |
| Left colon | T2 | 37 | 98      | 96.7–98.8 | Right colon | T2 | 37 | 98.4    | 97.2–99.1 |
| Left colon | T2 | 38 | 98.1    | 96.8–98.9 | Right colon | T2 | 38 | 98.5    | 97.3–99.1 |
| Left colon | T2 | 39 | 98.2    | 96.9–99   | Right colon | T2 | 39 | 98.5    | 97.4–99.2 |
| Left colon | T2 | 40 | 98.3    | 97–99     | Right colon | T2 | 40 | 98.6    | 97.5–99.2 |
| Left colon | T3 | 2  | 54.9    | 51.6–57.1 | Right colon | T3 | 2  | 59.6    | 56–61.9   |
| Left colon | T3 | 3  | 59.6    | 55.9–62.1 | Right colon | T3 | 3  | 63.8    | 59.9–66.4 |
| Left colon | T3 | 4  | 63.6    | 59.5–66.5 | Right colon | T3 | 4  | 67.3    | 63–70.2   |
| Left colon | T3 | 5  | 67      | 62.5–70.2 | Right colon | T3 | 5  | 70.2    | 65.6–73.4 |
| Left colon | T3 | 6  | 69.9    | 65.1–73.4 | Right colon | T3 | 6  | 72.7    | 67.8–76.2 |
| Left colon | T3 | 7  | 72.4    | 67.3–76.2 | Right colon | T3 | 7  | 74.9    | 69.7–78.5 |
| Left colon | T3 | 8  | 74.6    | 69.3–78.5 | Right colon | T3 | 8  | 76.8    | 71.3–80.6 |
| Left colon | T3 | 9  | 76.6    | 71–80.6   | Right colon | T3 | 9  | 78.4    | 72.8–82.4 |
| Left colon | T3 | 10 | 78.2    | 72.6–82.4 | Right colon | T3 | 10 | 79.9    | 74.1–83.9 |
| Left colon | T3 | 11 | 79.7    | 74–84     | Right colon | T3 | 11 | 81.1    | 75.3–85.3 |
| Left colon | T3 | 12 | 81.1    | 75.2–85.3 | Right colon | T3 | 12 | 82.3    | 76.3–86.5 |
| Left colon | T3 | 13 | 82.3    | 76.3–86.5 | Right colon | T3 | 13 | 83.3    | 77.3–87.5 |
| Left colon | T3 | 14 | 83.3    | 77.3–87.6 | Right colon | T3 | 14 | 84.2    | 78.1–88.5 |
| Left colon | T3 | 15 | 84.3    | 78.3–88.6 | Right colon | T3 | 15 | 85.1    | 78.9–89.3 |
| Left colon | T3 | 16 | 85.2    | 79.1–89.4 | Right colon | T3 | 16 | 85.8    | 79.7–90.1 |
| Left colon | T3 | 17 | 86      | 79.9–90.2 | Right colon | T3 | 17 | 86.5    | 80.3–90.7 |
| Left colon | T3 | 18 | 86.7    | 80.7–90.9 | Right colon | T3 | 18 | 87.2    | 81–91.3   |
| Left colon | T3 | 19 | 87.4    | 81.4–91.5 | Right colon | T3 | 19 | 87.7    | 81.6–91.9 |
| Left colon | T3 | 20 | 88      | 82–92     | Right colon | T3 | 20 | 88.3    | 82.1–92.4 |
| Left colon | T3 | 21 | 88.5    | 82.6–92.5 | Right colon | T3 | 21 | 88.8    | 82.6–92.8 |
| Left colon | T3 | 22 | 89      | 83.1–93   | Right colon | T3 | 22 | 89.2    | 83.1–93.3 |
| Left colon | T3 | 23 | 89.5    | 83.6–93.4 | Right colon | T3 | 23 | 89.7    | 83.5–93.6 |
| Left colon | T3 | 24 | 90      | 84.1–93.8 | Right colon | T3 | 24 | 90.1    | 84–94     |
| Left colon | T3 | 25 | 90.4    | 84.6–94.1 | Right colon | T3 | 25 | 90.4    | 84.4–94.3 |
| Left colon | T3 | 26 | 90.8    | 85–94.5   | Right colon | T3 | 26 | 90.8    | 84.7–94.6 |
| Left colon | T3 | 27 | 91.1    | 85.4–94.8 | Right colon | T3 | 27 | 91.1    | 85.1–94.9 |
| Left colon | T3 | 28 | 91.5    | 85.8–95   | Right colon | T3 | 28 | 91.4    | 85.4–95.1 |

Table S2 (continued)

Table S2 (continued)

| Site       | T  | N  | NSS (%) | 95% CI    | Site        | T  | N  | NSS (%) | 95% CI    |
|------------|----|----|---------|-----------|-------------|----|----|---------|-----------|
| Left colon | T3 | 29 | 91.8    | 86.2–95.3 | Right colon | T3 | 29 | 91.7    | 85.8–95.3 |
| Left colon | T3 | 30 | 92.1    | 86.5–95.5 | Right colon | T3 | 30 | 92      | 86.1–95.6 |
| Left colon | T3 | 31 | 92.3    | 86.8–95.7 | Right colon | T3 | 31 | 92.2    | 86.4–95.8 |
| Left colon | T3 | 32 | 92.6    | 87.1–95.9 | Right colon | T3 | 32 | 92.5    | 86.6–95.9 |
| Left colon | T3 | 33 | 92.8    | 87.4–96.1 | Right colon | T3 | 33 | 92.7    | 86.9–96.1 |
| Left colon | T3 | 34 | 93.1    | 87.7–96.3 | Right colon | T3 | 34 | 92.9    | 87.2–96.3 |
| Left colon | T3 | 35 | 93.3    | 88–96.5   | Right colon | T3 | 35 | 93.1    | 87.4–96.4 |
| Left colon | T3 | 36 | 93.5    | 88.3–96.6 | Right colon | T3 | 36 | 93.3    | 87.6–96.6 |
| Left colon | T3 | 37 | 93.7    | 88.5–96.7 | Right colon | T3 | 37 | 93.5    | 87.9–96.7 |
| Left colon | T3 | 38 | 93.9    | 88.7–96.9 | Right colon | T3 | 38 | 93.7    | 88.1–96.8 |
| Left colon | T3 | 39 | 94.1    | 89–97     | Right colon | T3 | 39 | 93.8    | 88.3–97   |
| Left colon | T3 | 40 | 94.2    | 89.2–97.1 | Right colon | T3 | 40 | 94      | 88.5–97.1 |
| Left colon | T4 | 2  | 49.1    | 44.3–52.3 | Right colon | T4 | 2  | 43.2    | 36.5–47.4 |
| Left colon | T4 | 3  | 54.5    | 49–58.4   | Right colon | T4 | 3  | 48.1    | 40.5–53.2 |
| Left colon | T4 | 4  | 59      | 52.7–63.5 | Right colon | T4 | 4  | 52.2    | 43.7–58.1 |
| Left colon | T4 | 5  | 62.7    | 55.8–67.7 | Right colon | T4 | 5  | 55.7    | 46.4–62.2 |
| Left colon | T4 | 6  | 65.8    | 58.4–71.2 | Right colon | T4 | 6  | 58.7    | 48.8–65.8 |
| Left colon | T4 | 7  | 68.4    | 60.6–74.2 | Right colon | T4 | 7  | 61.3    | 50.8–68.9 |
| Left colon | T4 | 8  | 70.7    | 62.6–76.7 | Right colon | T4 | 8  | 63.6    | 52.6–71.5 |
| Left colon | T4 | 9  | 72.7    | 64.3–78.9 | Right colon | T4 | 9  | 65.7    | 54.2–73.9 |
| Left colon | T4 | 10 | 74.4    | 65.8–80.7 | Right colon | T4 | 10 | 67.5    | 55.7–75.9 |
| Left colon | T4 | 11 | 76      | 67.2–82.4 | Right colon | T4 | 11 | 69.1    | 57–77.7   |
| Left colon | T4 | 12 | 77.3    | 68.5–83.8 | Right colon | T4 | 12 | 70.5    | 58.2–79.3 |
| Left colon | T4 | 13 | 78.6    | 69.6–85   | Right colon | T4 | 13 | 71.9    | 59.3–80.7 |
| Left colon | T4 | 14 | 79.7    | 70.7–86.1 | Right colon | T4 | 14 | 73.1    | 60.4–81.9 |
| Left colon | T4 | 15 | 80.7    | 71.6–87.1 | Right colon | T4 | 15 | 74.2    | 61.3–83.1 |
| Left colon | T4 | 16 | 81.6    | 72.5–87.9 | Right colon | T4 | 16 | 75.2    | 62.2–84.1 |
| Left colon | T4 | 17 | 82.4    | 73.3–88.7 | Right colon | T4 | 17 | 76.1    | 63.1–85   |
| Left colon | T4 | 18 | 83.2    | 74.1–89.4 | Right colon | T4 | 18 | 77      | 63.9–85.9 |
| Left colon | T4 | 19 | 83.9    | 74.8–90   | Right colon | T4 | 19 | 77.8    | 64.6–86.6 |
| Left colon | T4 | 20 | 84.5    | 75.4–90.6 | Right colon | T4 | 20 | 78.6    | 65.3–87.3 |
| Left colon | T4 | 21 | 85.1    | 76.1–91.1 | Right colon | T4 | 21 | 79.3    | 66–88     |
| Left colon | T4 | 22 | 85.7    | 76.7–91.6 | Right colon | T4 | 22 | 79.9    | 66.6–88.5 |
| Left colon | T4 | 23 | 86.2    | 77.2–92.1 | Right colon | T4 | 23 | 80.5    | 67.2–89.1 |
| Left colon | T4 | 24 | 86.7    | 77.7–92.4 | Right colon | T4 | 24 | 81.1    | 67.8–89.6 |

Table S2 (continued)

**Table S2** (continued)

| Site       | T  | N  | NSS (%) | 95% CI    | Site        | T  | N  | NSS (%) | 95% CI    |
|------------|----|----|---------|-----------|-------------|----|----|---------|-----------|
| Left colon | T4 | 25 | 87.1    | 78.2–92.8 | Right colon | T4 | 25 | 81.6    | 68.3–90   |
| Left colon | T4 | 26 | 87.5    | 78.7–93.2 | Right colon | T4 | 26 | 82.2    | 68.8–90.5 |
| Left colon | T4 | 27 | 87.9    | 79.1–93.5 | Right colon | T4 | 27 | 82.6    | 69.3–90.9 |
| Left colon | T4 | 28 | 88.3    | 79.5–93.8 | Right colon | T4 | 28 | 83.1    | 69.8–91.3 |
| Left colon | T4 | 29 | 88.7    | 79.9–94   | Right colon | T4 | 29 | 83.5    | 70.2–91.6 |
| Left colon | T4 | 30 | 89      | 80.3–94.3 | Right colon | T4 | 30 | 83.9    | 70.7–91.9 |
| Left colon | T4 | 31 | 89.3    | 80.7–94.5 | Right colon | T4 | 31 | 84.3    | 71.1–92.2 |
| Left colon | T4 | 32 | 89.6    | 81–94.7   | Right colon | T4 | 32 | 84.7    | 71.5–92.5 |
| Left colon | T4 | 33 | 89.9    | 81.4–94.9 | Right colon | T4 | 33 | 85.1    | 71.9–92.8 |
| Left colon | T4 | 34 | 90.2    | 81.7–95.1 | Right colon | T4 | 34 | 85.4    | 72.2–93   |
| Left colon | T4 | 35 | 90.4    | 82–95.3   | Right colon | T4 | 35 | 85.7    | 72.6–93.3 |
| Left colon | T4 | 36 | 90.6    | 82.3–95.5 | Right colon | T4 | 36 | 86      | 72.9–93.5 |
| Left colon | T4 | 37 | 90.9    | 82.6–95.6 | Right colon | T4 | 37 | 86.3    | 73.3–93.7 |
| Left colon | T4 | 38 | 91.1    | 82.9–95.8 | Right colon | T4 | 38 | 86.6    | 73.6–93.9 |
| Left colon | T4 | 39 | 91.3    | 83.1–95.9 | Right colon | T4 | 39 | 86.9    | 73.9–94.1 |
| Left colon | T4 | 40 | 91.5    | 83.4–96.1 | Right colon | T4 | 40 | 87.1    | 74.2–94.3 |

N, numbers of examined lymph nodes; NSS, node staging score; CI, confidence interval.

**Table S3** Multivariate Cox proportional hazards model of cancer-specific survival in the SEER cohort

| Variable                         | T3N0 (n=24,796)  | Left-sided T4N0 (n=1,430) | Right-sided T4N0 (n=2,078) |
|----------------------------------|------------------|---------------------------|----------------------------|
| ELNs (reference: insufficient)   | 0.68 (0.63–0.73) | 0.66 (0.49–0.89)          | 0.75 (0.55–1.03)           |
| Side (reference: left-sided)     | 0.82 (0.78–0.87) | –                         | –                          |
| Tumor grade (reference: grade 1) |                  |                           |                            |
| Grade 2                          | 1.14 (1.02–1.27) | 1.08 (0.83–1.40)          | 1.04 (0.80–1.35)           |
| Grade 3                          | 1.26 (1.11–1.43) | 1.48 (1.09–2.01)          | 1.02 (0.77–1.36)           |
| Grade 4                          | 1.25 (0.99–1.56) | 1.00 (0.54–1.85)          | 1.31 (0.88–1.94)           |
| Chemotherapy (reference: no)     | 0.94 (0.88–1.01) | 0.76 (0.66–0.87)          | 0.81 (0.71–0.93)           |

Data are hazard ratio (95% confidence interval). Sufficient ELNs were defined as  $\geq 24$  lymph nodes for T3N0,  $\geq 34$  lymph nodes for left-sided T4N0, and  $\geq 40$  lymph nodes for right-sided T4N0 colon cancer. SEER, Surveillance, Epidemiology, and End Results; ELN, examined lymph node.