## Supplementary Figure 1.




Threshold Probability for EC Mortality (Validation Phase)

Supplementary Table 1. Determination of scores associated with each of the quintile ranges of metabolic risk factors in derivation group

| Metabolic risk factor | Quintile (range)* | Ref. value ${ }^{* *}$ | Reg. coef. | $\begin{aligned} & \text { Pre- } \\ & \text { score } \end{aligned}$ | Shrunk score ${ }^{\dagger}$ | Score ${ }^{\ddagger}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{BMI}\left(\mathrm{kg} / \mathrm{m}^{2}\right)$ | Q1: 17.15-19.72 | 18.44 | 0.0126 | -0.0437 | -0.0441 | -1 |
|  | Q2: 19.72-21.22 | 20.47 |  | -0.0181 | -0.0183 | 0 |
|  | Q3: 21.22-22.60 | 21.91 |  | Ref. | Ref. | 0 |
|  | Q4: 22.60-24.77 | 23.68 |  | 0.0224 | 0.0226 | 1 |
|  | Q5: 24.77-29.05 | 26.91 |  | 0.0630 | 0.0636 | 1 |
| PP (mmHg) | Q1: 25.00-35.00 | 30.00 | 0.0048 | -0.0720 | -0.0726 | -2 |
|  | Q2: $35.00-40.00$ | 37.50 |  | -0.0360 | -0.0363 | -1 |
|  | Q3: 40.00-50.00 | 45.00 |  | Ref. | Ref. | 0 |
|  | Q4: 50.00-55.00 | 52.50 |  | 0.0360 | 0.0363 | 1 |
|  | Q5: 55.00-80.00 | 67.50 |  | 0.1080 | 0.1090 | 2 |
| FBG (mmol/L) | Q1: 3.76-4.51 | 4.14 | 0.0760 | -0.0832 | -0.0840 | -2 |
|  | Q2: 4.51-4.93 | 4.72 |  | -0.0388 | -0.0391 | -1 |
|  | Q3: 4.93-5.52 | 5.23 |  | Ref. | Ref. | 0 |
|  | Q4: 5.52-7.47 | 6.50 |  | 0.0963 | 0.0971 | 2 |
|  | Q5: 7.47-13.69 | 10.58 |  | 0.4066 | 0.4102 | 9 |
| TG (mmol/L) | Q1: 0.41-0.67 | 0.54 | -0.0304 | 0.0134 | 0.0135 | 0 |
|  | Q2: 0.67-0.87 | 0.77 |  | 0.0064 | 0.0064 | 0 |
|  | Q3: 0.87-1.08 | 0.98 |  | Ref. | Ref. | 0 |
|  | Q4: 1.08-1.51 | 1.30 |  | -0.0096 | -0.0097 | 0 |
|  | Q5: 1.51-3.56 | 2.54 |  | -0.0473 | -0.0477 | -1 |
| HDLC (mmol/L) | Q1: 0.47-0.78 | 0.63 | -0.3136 | 0.2180 | 0.2199 | 5 |
|  | Q2: 0.78-0.96 | 0.87 |  | 0.1411 | 0.1424 | 3 |
|  | Q3: 0.96-1.18 | 1.07 |  | 0.0784 | 0.0791 | 2 |
|  | Q4: 1.18-1.45 | 1.32 |  | Ref. | Ref. | 0 |
|  | Q5: 1.45-2.04 | 1.74 |  | -0.1332 | -0.1344 | -3 |

Abbreviations: BMI, body mass index; PP, pulse pressure; FBG, fasting blood glucose; TG, triglycerides; HDLC, high-density lipoprotein cholesterol; Ref. value, reference value; Reg. coef., regression coefficient; Ref., reference. *For each metabolic risk factor, to minimize the influence of extreme values, we use the $1^{\text {st }}$ and the $99^{\text {th }}$ percentile to determine the reference limits for the first and last quintiles. **Ref. value: middle point of quintile range. ${ }^{\dagger}$ The shrinkage coefficient is 1.0089 . The constant for the score system is based on the increase
in risk of esophageal cancer mortality associated with a 5 -year increase in age ( $\mathrm{B}=0.045$ ).
${ }^{\ddagger}$ The score is rounded to the nearest integer.

Supplementary Table 2. The baseline and clinicopathologic characteristics of patients who were lost to follow-up ( $n=147$ ) or died of causes other than esophageal cancer ( $n=204$ ) after discharge from the hospital

| Characteristics | Drop-outs or deaths of other causes |
| :--- | :---: |
| Sample size | 351 |
| Age at surgery (years) | $56.47 \pm 9.95$ |
| Males/females | $267 / 84$ |
| Body mass index (kg/m ${ }^{2}$ ) | $22.28 \pm 3.12$ |
| Ever smoking | $147(41.88 \%)$ |
| Ever drinking | $67(19.09 \%)$ |
| Family cancer history (+) | $46(13.11 \%)$ |
| Systolic blood pressure (mmHg) | $123.33 \pm 17.65$ |
| Diastolic blood pressure (mmHg) | $77.01 \pm 11.00$ |
| Fasting glucose (mmol/L) | $6.18 \pm 2.78$ |
| Triglycerides (mmol/L) | $1.20 \pm 0.79$ |
| Total cholesterol (mmol/L) | $4.78 \pm 1.05$ |
| HDL cholesterol (mmol/L) | $1.14 \pm 0.39$ |
| LDL cholesterol (mmol/L) | $3.12 \pm 0.96$ |
| Metabolic syndrome | Lower |
| Esophagus location | $33(9.40 \%)$ |
|  | $54(12.54 \%)$ |
| Histological differentiation | $252(71.79 \%)$ |
|  | Widdle |


|  | Moderate | 245 (69.80\%) |
| :---: | :---: | :---: |
|  | Poor | 48 (13.68\%) |
| Depth of invasion |  |  |
|  | T1-T2 | 97 (27.64\%) |
|  | T3-T4 | 254 (72.36\%) |
| Regional LNM |  |  |
|  | N0 | 149 (42.45\%) |
|  | N1 | 96 (27.35\%) |
|  | N2 | 74 (21.08\%) |
|  | N3 | 32 (9.12\%) |
| Tumor embolus (+) |  | 49 (13.96\%) |
| TNM stage |  |  |
|  | I | 30 (8.55\%) |
|  | II | 122 (34.76\%) |
|  | III | 199 (56.70\%) |
| Tumor size (cm) |  | $4.43 \pm 2.16$ |
| Abbreviations: HDL, high-density lipoprotein; LDL, low-density lipoprotein; LNM, lymph node metastasis; TNM, tumor node metastasis. Data are expressed as mean $\pm$ standard deviation or number (percentage). |  |  |

