Supplemental Data.

Figure 1 displays the multi-state model in which patients can move from AAA diagnosis to surgery and death. For each cohort group we calculate the frequencies and percentages of patients moving from diagnosis to surgery and or death (Table 1). We estimate unadjusted cumulative hazards via the Nelson-Aalen estimator (Figure 2).

Both diabetic cohorts had a lower rate of surgery than the non-diabetics (Table 1). However, the non-metformin exposed diabetics cohort had the highest mortality rate without (50.2%) and after (49%) surgery. Non-diabetics have a persistently higher hazard of surgery compared to both diabetic cohorts, which are relatively similar (Figure 2). The non-metformin diabetic cohort has a higher cumulative hazard of death compared to those on metformin and non-diabetics. Diabetics with metformin have a lower cumulative hazard of death compared to the non-diabetics for the first 10 years post AAA diagnosis. After 10-year post AAA diagnosis, the cumulative hazard of death for those on metformin supersede that of the non-diabetic cohort. Similarly, for death after surgery, the non-metformin diabetic patients have a higher cumulative hazard for the first 18 years after surgery. Diabetics with metformin have a cumulative hazard that is very close to the non-diabetic cohort until approximately 10 years after surgery. Ten years post-surgery the diabetic cohort with metformin has a higher cumulative hazard of death compared to the non-diabetic cohort which continues to increase until it supersedes the non-metformin diabetic cohort.

Figure 1. Multi-state model for AAA Diagnosis, AAA Surgery and Death.

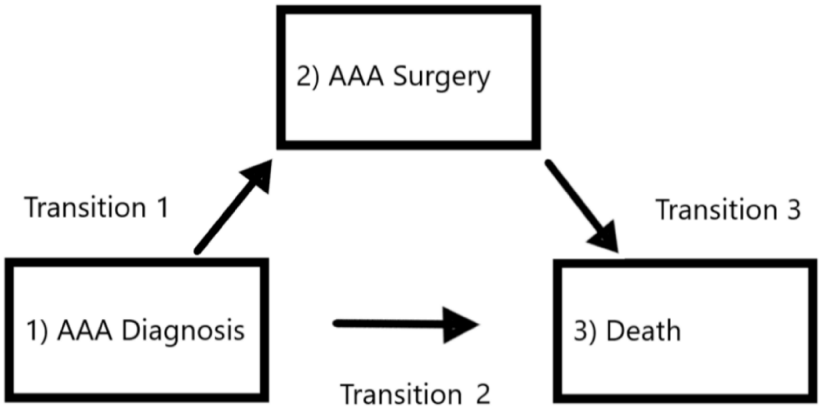

Table 1. Frequency and Rate of Transitions.

Cohort	AAA Surgery	Death	Death after Surgery*
Diabetic No Metformin exposure	2712 (6.2%)	21620 (50.2%)	1384 (49%)
Diabetic Metformin exposed	1817 (7.5%)	9657 (39.6%)	1049 (42.3%)
Non-Diabetics	5495 (9.8%)	26,774 (42.4%)	3241 (41%)

*N (%) among those who had surgery.

Figure 2. Unadjusted Hazards.