SUPPLEMENTAL MATERIALS

Supplemental Table S1. Absolute and Excess Mortality Rates per 100,000 per year following acute events in AIS, ICH and MI survivors

Age Category	All cause-mortality in the general population		All cause excess mortality in AIS / ICH survivors		All cause absolute mortality in AIS / ICH Survivors	
	Males	Females	Males	Females	Males	Females
45 to 54	547.8	319.9	+21	+16	568.8	335.9
55 to 64	1131.0	698.5	+35	+28	1166.0	726.5
65 to 74	2612.2	1736.3	+55	+53	2677.2	1789.3
over 75	8339.5	7240.6	+85	+89	8424.5	7329.6

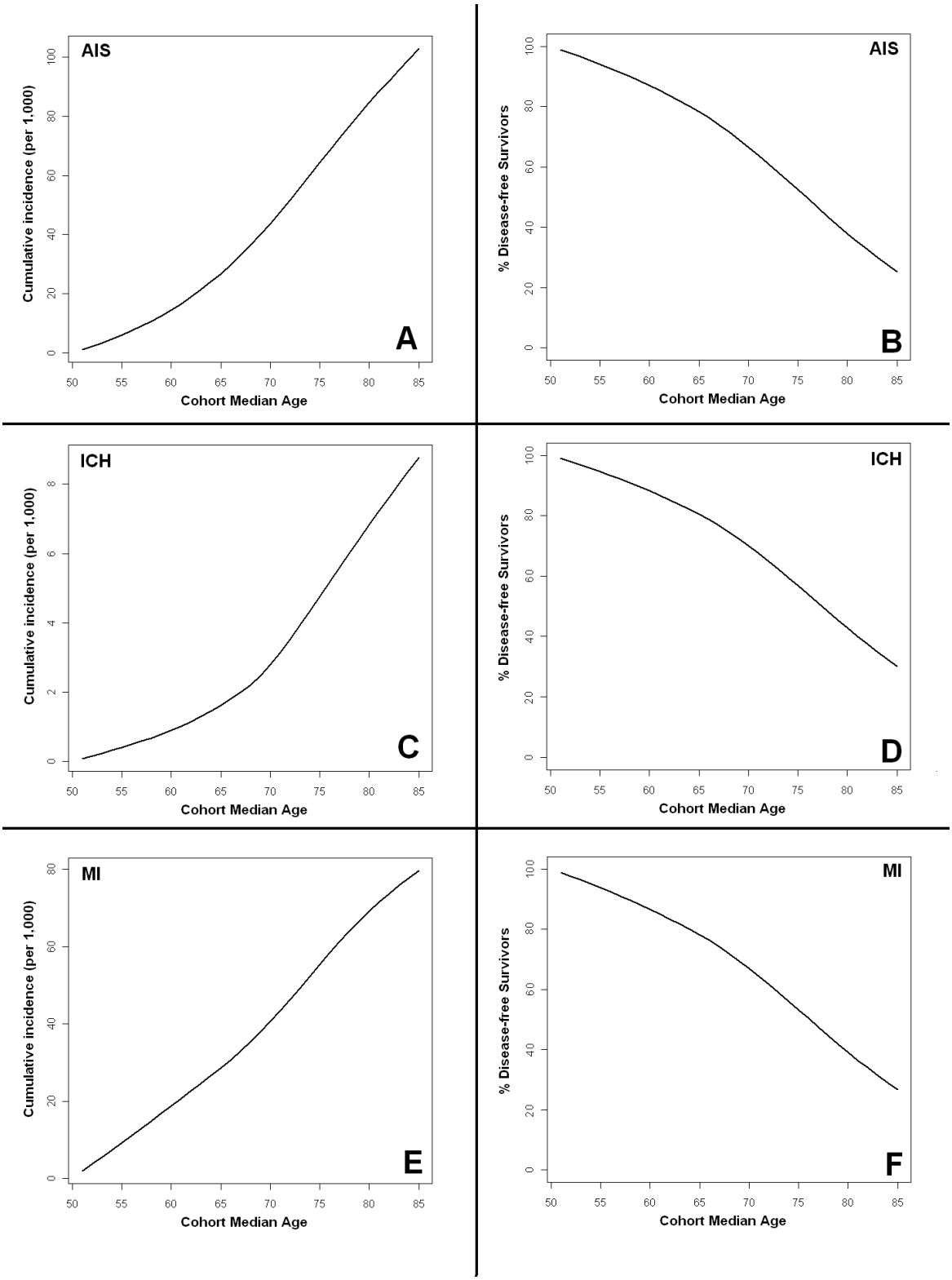
Supplemental Table S1 Legend. AIS = acute ischemic stroke. ICH = intracerebral hemorrhage. MI = myocardial infarction. All cause mortality reflects non-AIS and non-ICH total mortality in AIS and ICH survivors.

Supplemental Table S2. Absolute and Excess Mortality Rates per 100,000 per year following acute events in MI survivors

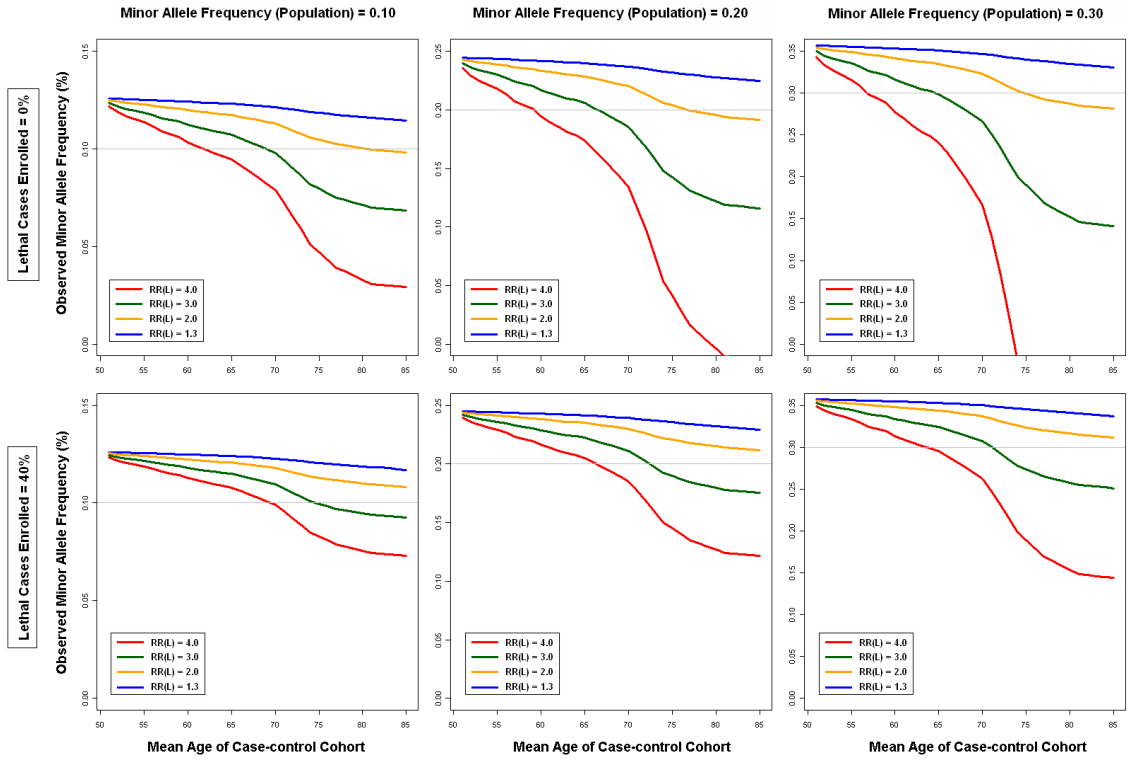
Age Category	All cause-mortality in the general population		All cause excess mortality in MI survivors		All cause absolute mortality in MI survivors	
	Males	**Females**	**Males**	**Females**	**Males**	**Females**
45 to 54	547.8	319.9	+17	+15	564.8	334.9
55 to 64	1131.0	698.5	+31	+26	1157.0	724.5
65 to 74	2612.2	1736.3	+48	+44	2660.2	1780.3
over 75	8339.5	7240.6	+78	+74	8417.5	7314.6

Supplemental Table S2 Legend. AIS = acute ischemic stroke. ICH = intracerebral hemorrhage. MI = myocardial infarction. All cause mortality reflects non-MI total mortality in MI survivors.

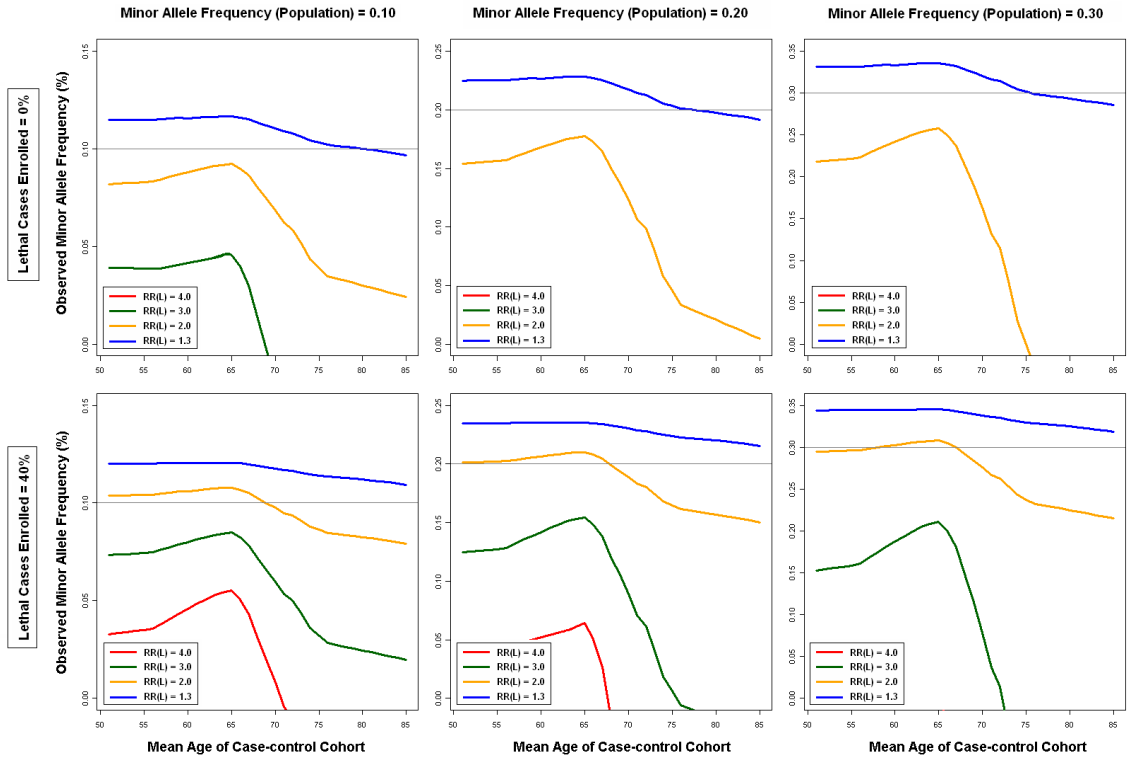
Supplemental Figure S1. Disease simulation results: cumulative-incidence and disease-free survival



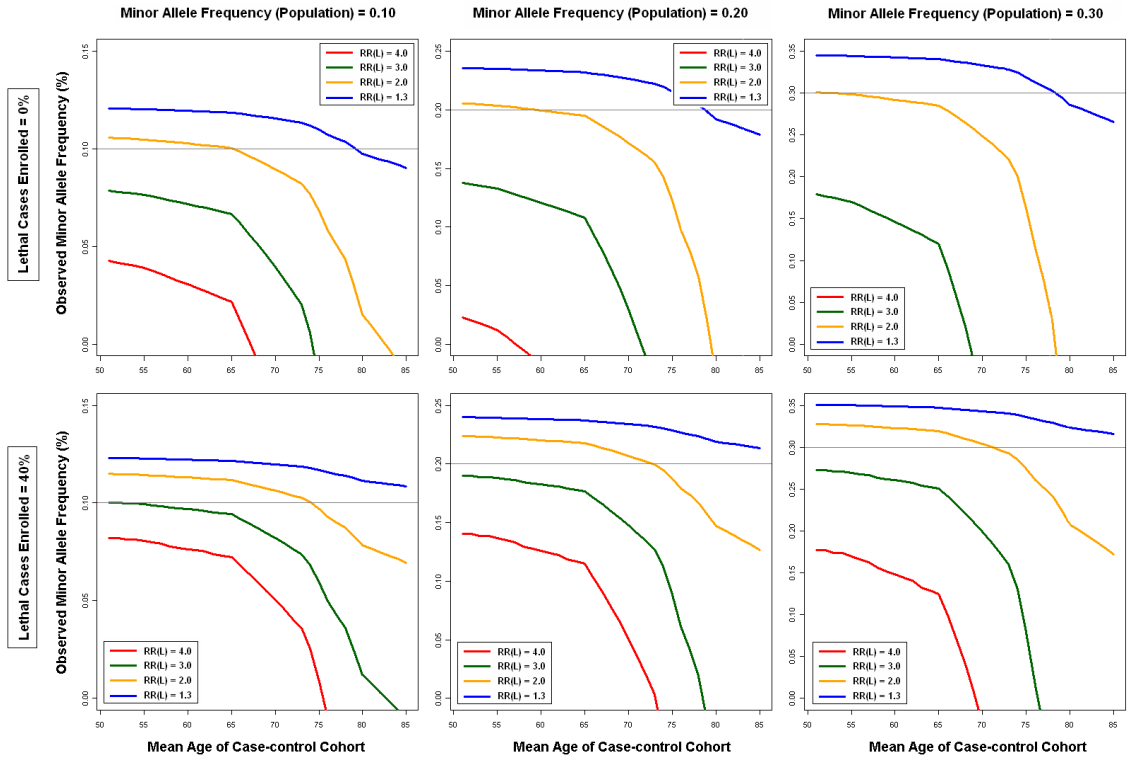
Supplemental Figure S2. Observed depletion in minor allele frequency with increasing age and relative risk of lethality in case-control simulation of acute ischemic stroke



Supplemental Figure S3. Observed depletion in minor allele frequency with increasing age and relative risk of lethality in case-control simulation of intracerebral hemorrhage



Supplemental Figure S4. Observed depletion in minor allele frequency with increasing age and relative risk of lethality in case-control simulation of myocardial infarction



Supplemental Figure S1 Legend. Cumulative-incidence per 100,000 individuals (panels A,C,E) and percent of individuals enrolled at baseline surviving free of disease (panels B,D,F) under the simulation model presented in the Methods for acute ischemic stroke (panels A,B), intracerebral hemorrhage (panels C,D), and myocardial infarction (panels E,F). Estimates are calculated from the cohort after a simulated 35 year period from inception.

Supplemental Figure S2 Legend. RR(L) = genetic relative risk of lethality for the assumed genetic variant. Observed case minor allele frequencies (MAF) in a case-control framework are plotted for varying mean cohort ages and genetic relative risk of lethality. Separate simulations are shown for starting population MAF of 0.10, 0.20, and 0.30, as represented by the thin grey horizontal line on each plot. The top 3 graphs assume a 0% ascertainment of lethal cases, while the bottom 3 graphs assume a 40% ascertainment of lethal cases. Apparent reversal of effect is seen when the observed case MAF is below the population MAF (grey line).

Supplemental Figure S3 Legend. RR(L) = genetic relative risk of lethality for the assumed genetic variant. Observed case minor allele frequencies (MAF) in a case-control framework are plotted for varying mean cohort ages and genetic relative risk of lethality. Separate simulations are shown for starting population MAF of 0.10, 0.20, and 0.30, as represented by the thin grey horizontal line on each plot. The top 3 graphs assume a 0% ascertainment of lethal cases, while the bottom 3 graphs assume a 40% ascertainment of lethal cases. For graphs in which high RR(L) curves are absent, the genetic variant's MAF rapidly has rapidly decreased to zero, resulting in a monomorphic variant. Apparent reversal of effect is seen when the observed case MAF is below the population MAF (grey line).

Supplemental Figure S4 Legend. RR(L) = genetic relative risk of lethality for the assumed genetic variant. Observed case minor allele frequencies (MAF) in case-control are plotted for varying mean

cohort ages and genetic relative risk of lethality. Separate simulations are shown for starting population MAF of 0.10, 0.20, and 0.30, as represented by the thin grey horizontal line on each plot. The top 3 graphs assume a 0% ascertainment of lethal cases, while the bottom 3 graphs assume a 40% ascertainment of lethal cases. For graphs in which high RR(L) curves are absent, the genetic variant's MAF rapidly has rapidly decreased to zero, resulting in a monomorphic variant. Apparent reversal of effect is seen when the observed case MAF falls below the population MAF (grey line).

PubMed (http://www.pubmed.org) search terms for population-based incidence and mortality:

Acute Ischemic Stroke
Stroke
Ischemic Stroke
Acute Ischemic Stroke
Cerebral Infarction
Cerebrovascular
Incidence
Prevalence
Mortality
Lethality
Epidemiology
Population
Longitudinal
Registry

Intracerebral Hemorrhage
ICH
Hemorrhage
Hemorrhagic
Stroke
Intracerebral Hemorrhage
Cerebrovascular
Incidence
Prevalence
Mortality
Lethality
Epidemiology
Population
Longitudinal
Registry

Myocardial Infarction
Myocardial Infarction
Acute Myocardial Infarction
MI
Cardiovascular
Incidence
Prevalence
Mortality
Lethality
Epidemiology
Population
Longitudinal
Registry