**Additional file 1: Table S1. Selected interactions in 100 lasso regression analyses.**

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| Selected interactions | Frequency\* |
| Killip class \* beta-blocker use | 95 |
| male sex \* LVEF < 40% | 68 |
| male sex \* depression high† | 64 |
| male sex \* age < 50 | 64 |
| male sex \* hyperlipidemia | 61 |
| diabetes \* beta-blocker use | 36 |
| hyperlipidemia \* Killip class | 34 |
| diabetes \* beta-blocker use \* depression high† | 31 |
| hyperlipidemia \* LVEF < 40% \* BMI > 30 | 26 |
| LVEF < 40% \* beta-blocker use \* BMI > 30 | 20 |
| hyperlipidemia \* beta-blocker use | 19 |
| hyperlipidemia \* depression low† | 14 |
| diabetes \* LVEF < 40% \* BMI > 30 | 12 |
| male sex \* hyperlipidemia \* depression high† | 12 |
| male sex \* hyperlipidemia \* beta-blocker use | 8 |
| smoking \* hyperlipidemia \* depression high† | 6 |
| male sex \* smoking | 5 |
| male sex \* beta-blocker use | 5 |
| LVEF < 40% \* beta-blocker use \* depression high† | 5 |
| male sex \* LVEF < 40% \* depression high† | 5 |
| male sex \* depression low† | 4 |
| smoking \* depression high† | 4 |
| smoking \* history of MI \* age > 70 | 4 |
| hyperlipidemia \* beta-blocker use \* depression high† | 4 |
| Killip class \* depression low† | 3 |
| male sex \* hyperlipidemia \* history of MI | 3 |
| LVEF < 40% \* BMI > 30 | 2 |
| beta-blocker use \* BMI > 30 | 2 |
| beta-blocker use \* age > 70 \* depression high† | 2 |
| male sex \* LVEF < 40% \* beta-blocker use | 2 |
| smoking \* age < 50 | 1 |
| LVEF < 40% \* beta-blocker use | 1 |
| LVEF < 40% \* BMI < 20 | 1 |
| history of MI \* antidepressant use \* age > 70 | 1 |
| LVEF < 40% \* Killip class \* beta-blocker use | 1 |
| LVEF < 40% \* Killip class \* BMI > 30 | 1 |
| male sex \* LVEF < 40% \* antidepressant use | 1 |
| male sex \* diabetes \* Killip class | 1 |
| male sex \* diabetes \* beta-blocker use | 1 |
| male sex \* beta-blocker use \* antidepressant use | 1 |

Abbreviations: BMI, body mass index; LVEF, left ventricular ejection fraction; MI, myocardial infarction.

\* The number of times this interaction was found with a penalized beta-coefficient ≥ 0.1 or ≤-0.1 in the models with minimal prediction error resulting from 100 lasso regression analyses in random 80% samples of the training data (n=6,728).

† Depression low and high: depression *z*-score in the lowest and highest quartile. Intermediate depression z-score is the reference class.