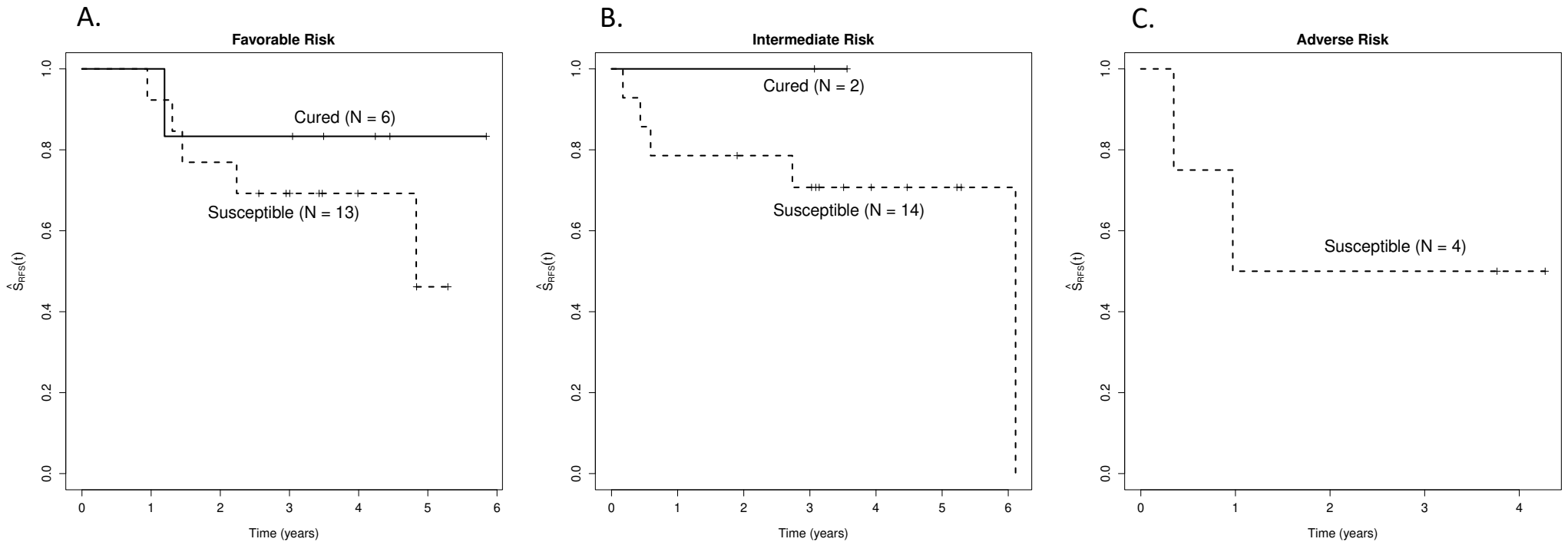
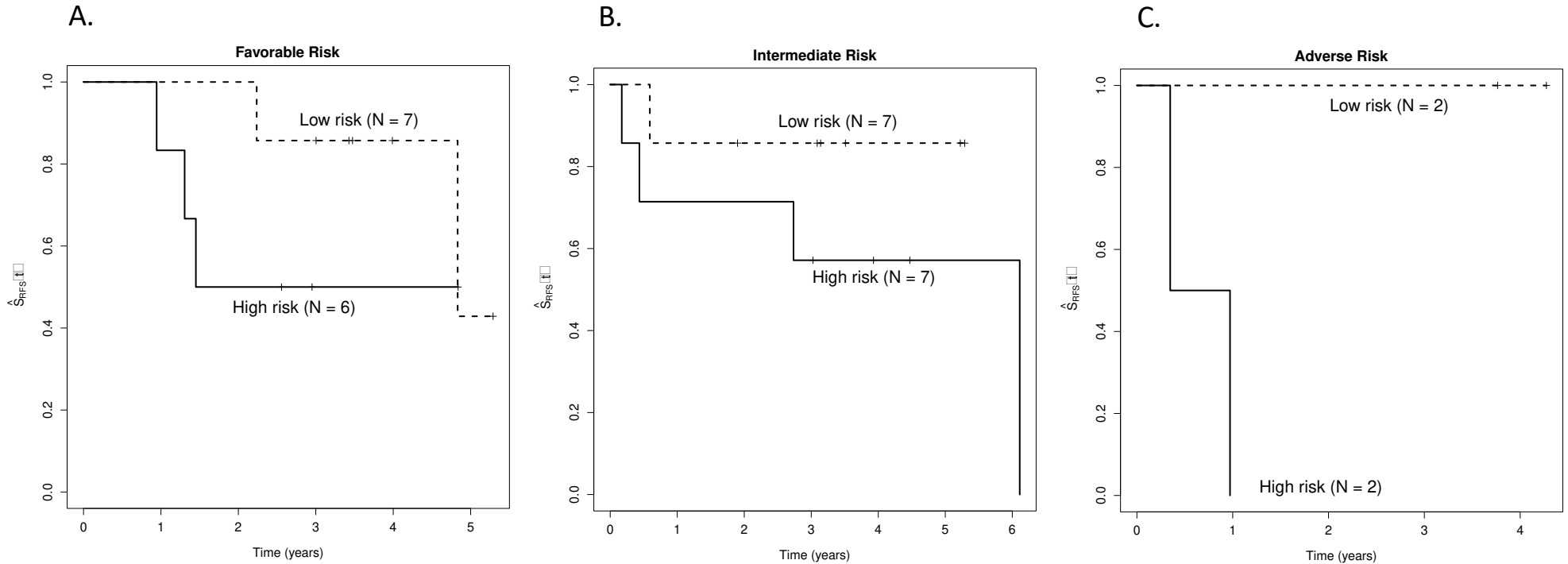


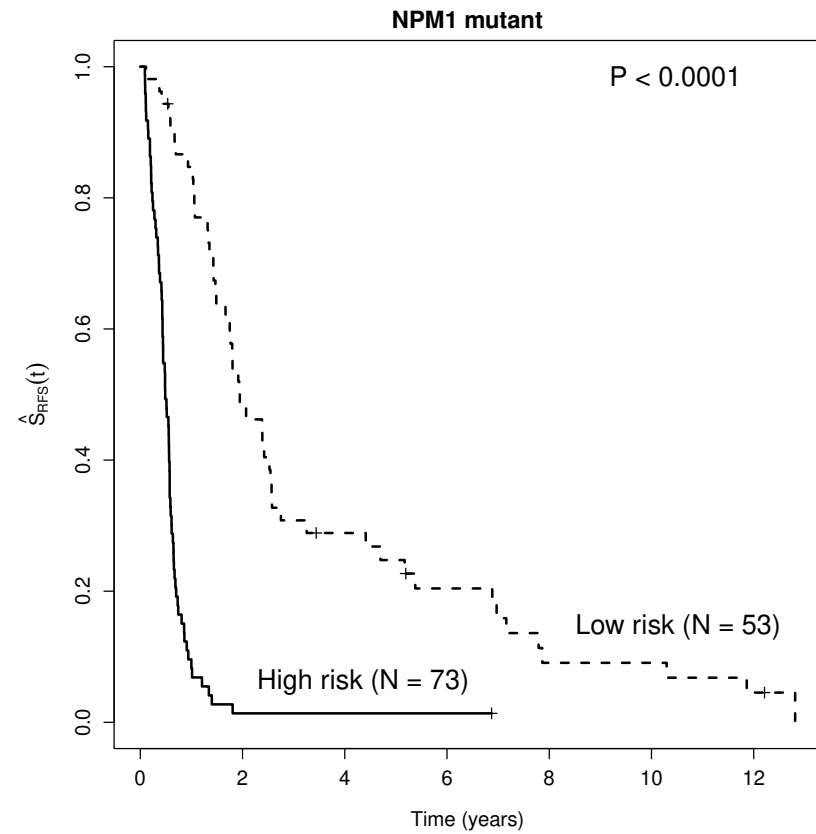
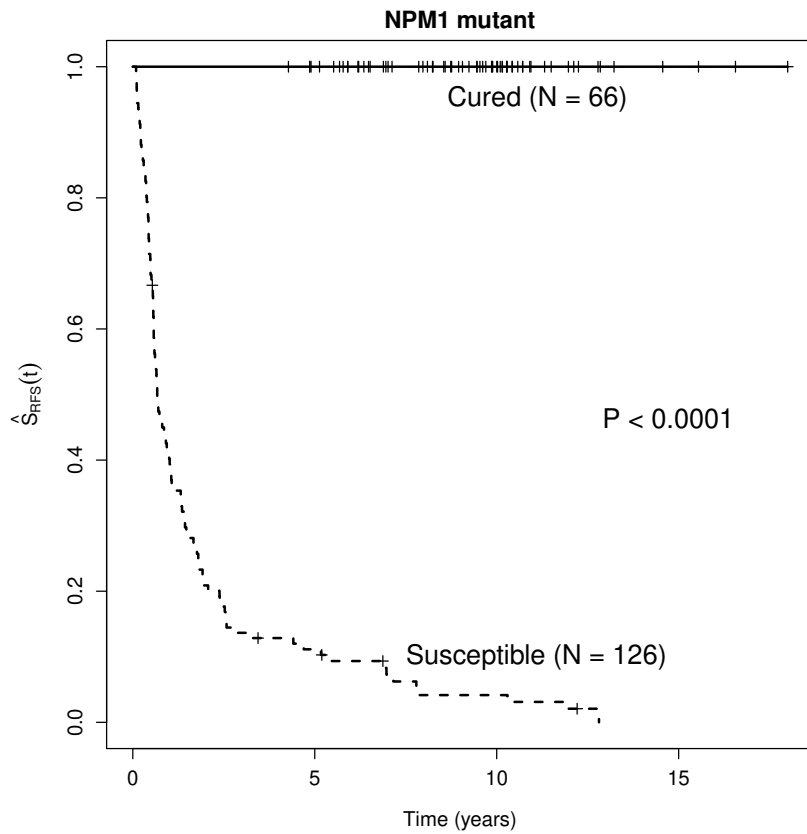
Supplementary Figure 1. RFS by 2022 ELN genetic-risk group and cure status for the test set. A) Kaplan-Meier curve for relapse-free survival for 2022 ELN Favorable risk patients in the test set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM. B) Kaplan-Meier curve for relapse-free survival for 2022 ELN Intermediate risk patients in the test set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM. C) Kaplan-Meier curve for relapse-free survival for 2022 ELN Adverse risk patients in the test set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM. .



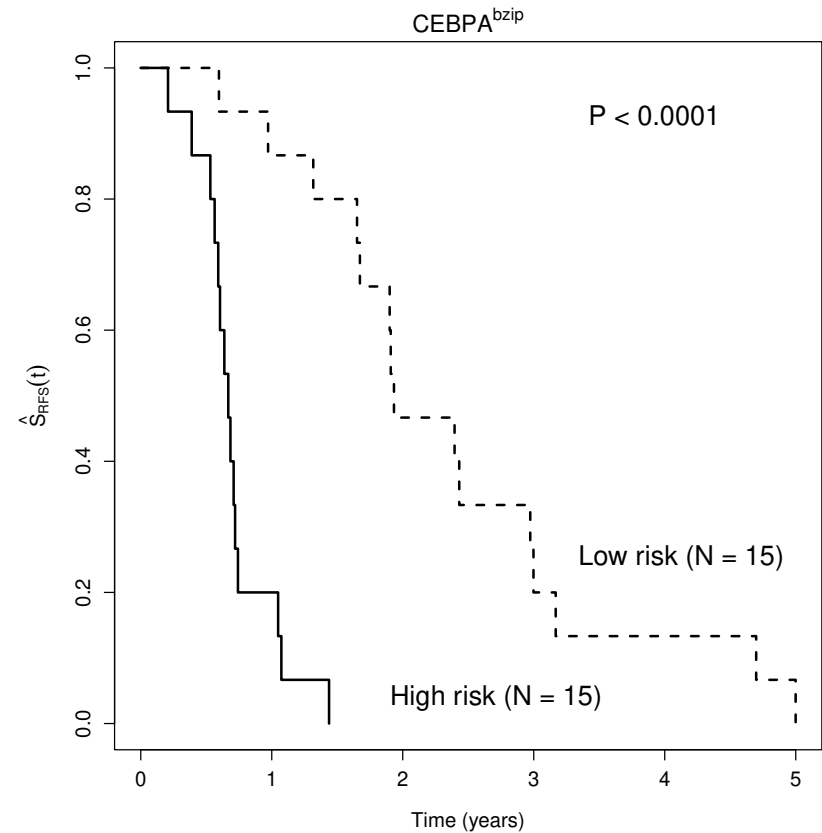
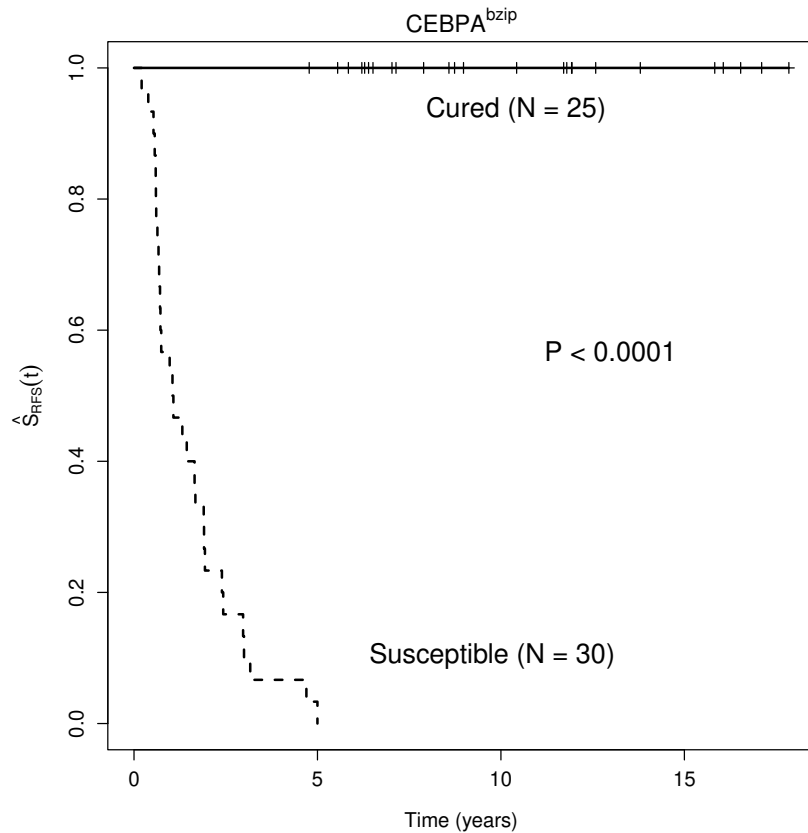
Supplementary Figure 2. RFS by 2022 ELN genetic-risk group among susceptibles in the test set. A) Kaplan-Meier curve for relapse-free survival for 2022 ELN Favorable risk patients predicted to be susceptible in the test set using the semi-parametric penalized MCM, stratified by high versus low risk of relapse. B) Kaplan-Meier curve for relapse-free survival for 2022 ELN Intermediate risk patients predicted to be susceptible in the test set using the semi-parametric penalized MCM, stratified by high versus low risk of relapse. C) Kaplan-Meier curve for relapse-free survival for 2022 ELN Adverse risk patients predicted to be susceptible in the test set using the semi-parametric penalized MCM, stratified by high versus low risk of relapse.



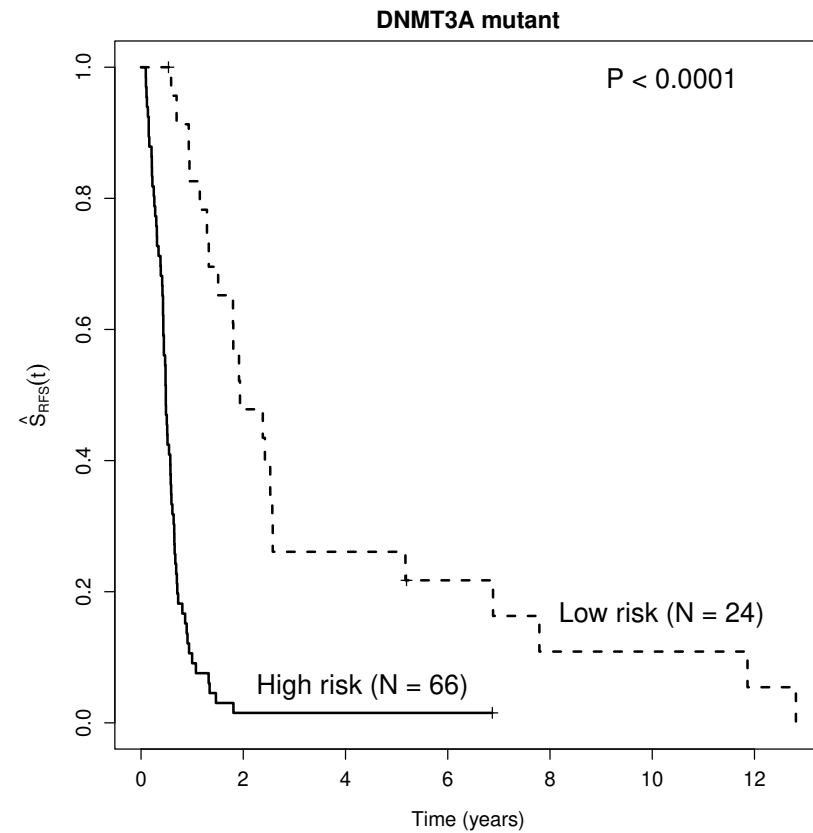
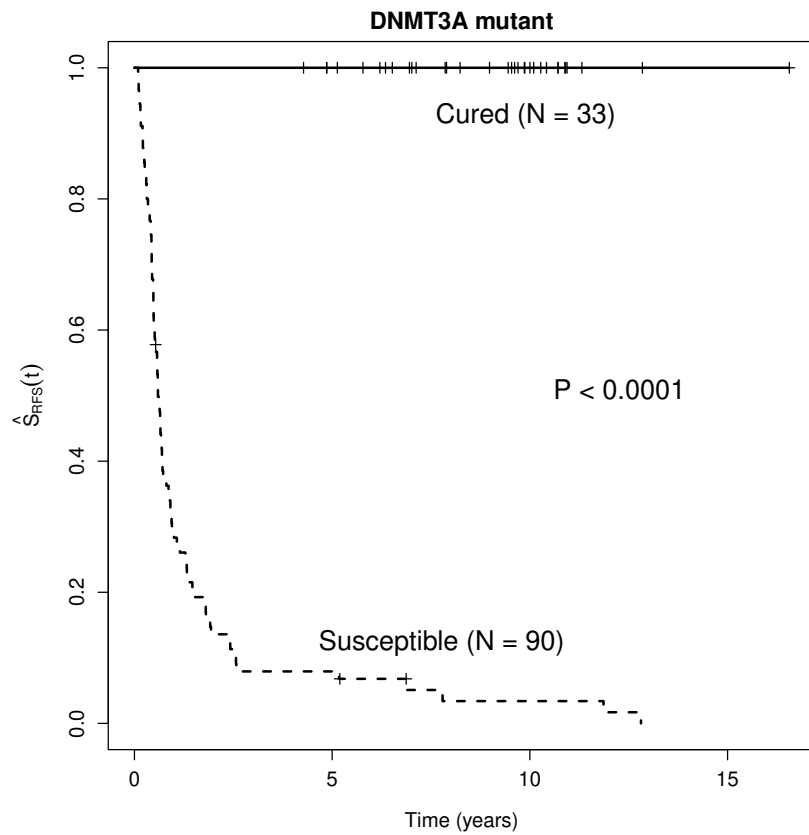
Supplementary Figure 3. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *NPM1* mutant. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with *NPM1* mutant.



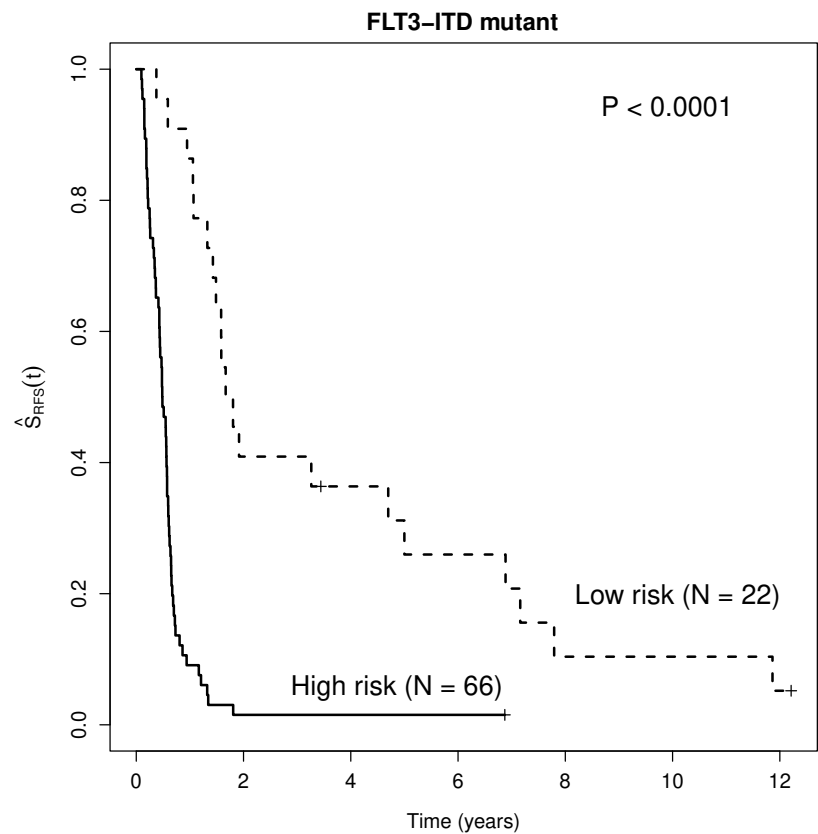
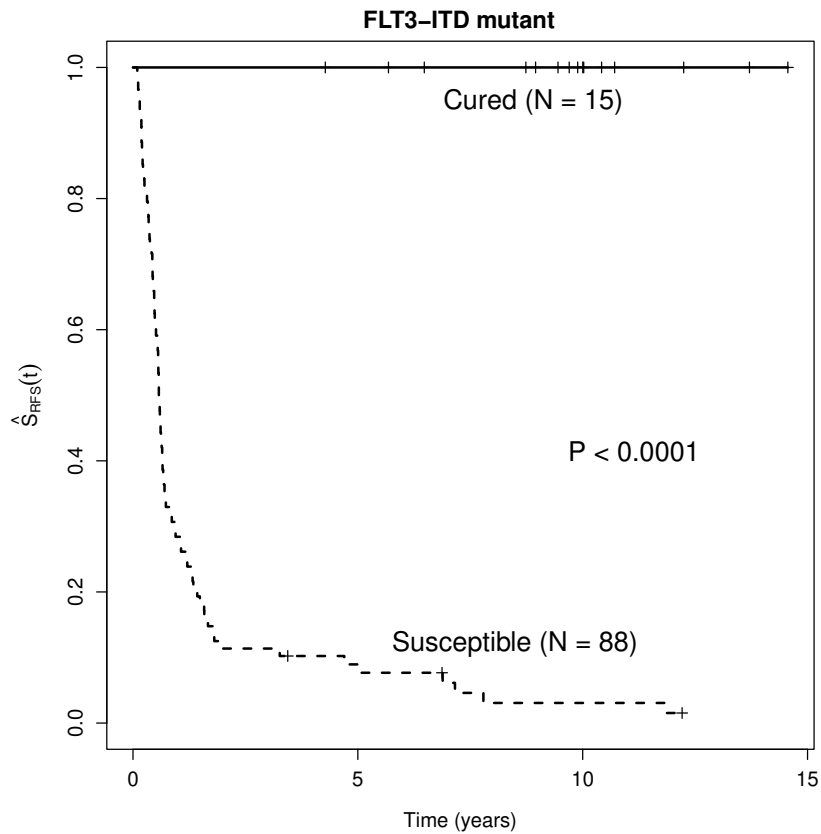
Supplementary Figure 4. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with $CEBPA^{bzip}$. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with $CEBPA^{bzip}$.



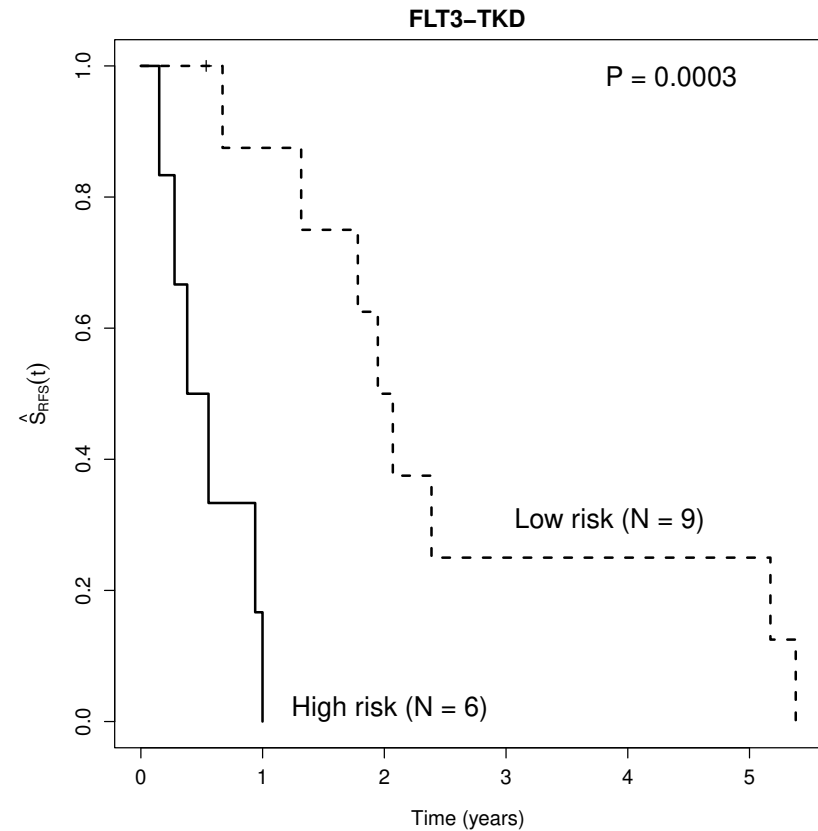
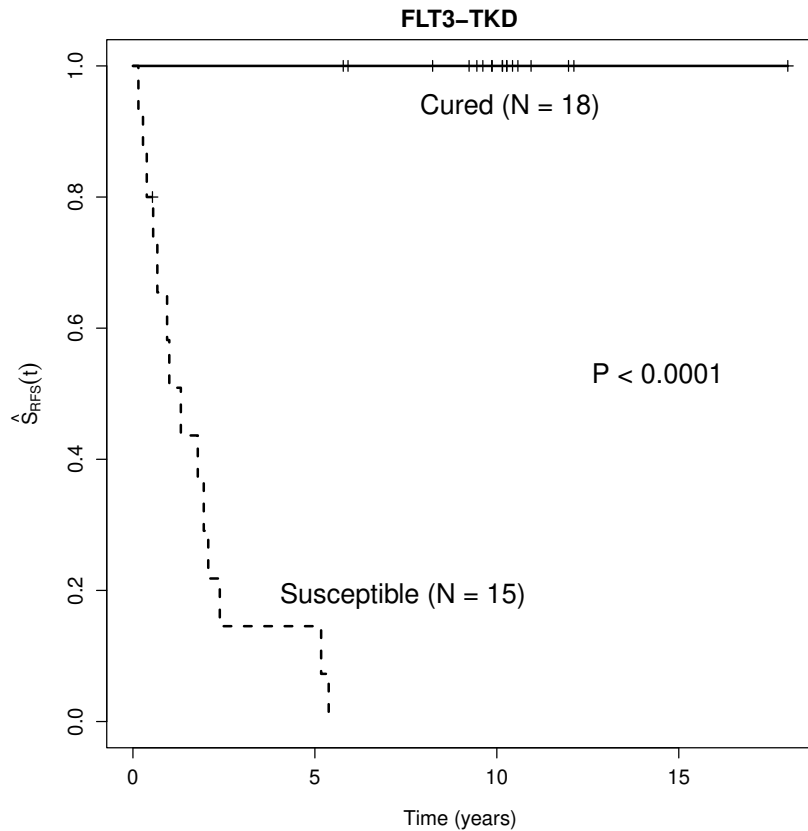
Supplementary Figure 5. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *DNMT3A* mutant. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with *DNMT3A* mutant.



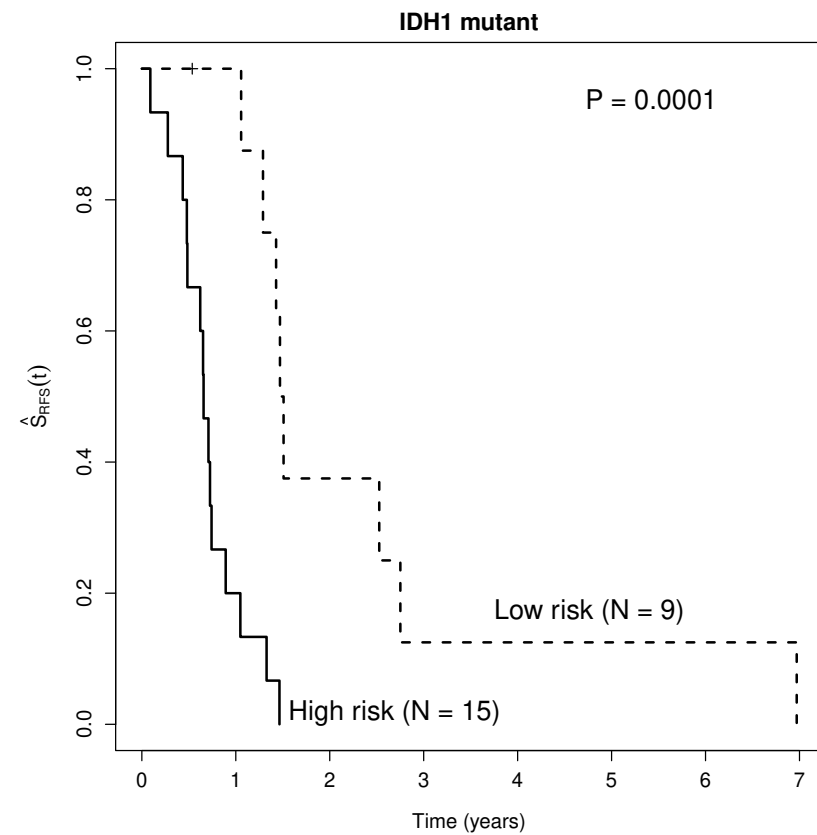
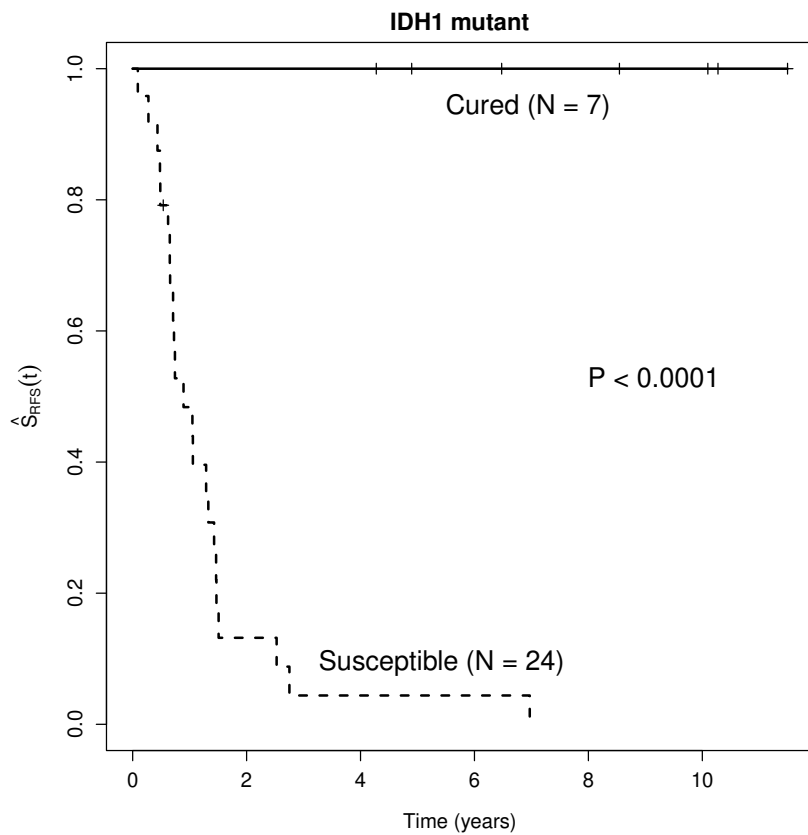
Supplementary Figure 6. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *FLT3*-ITD. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with *FLT3*-ITD.



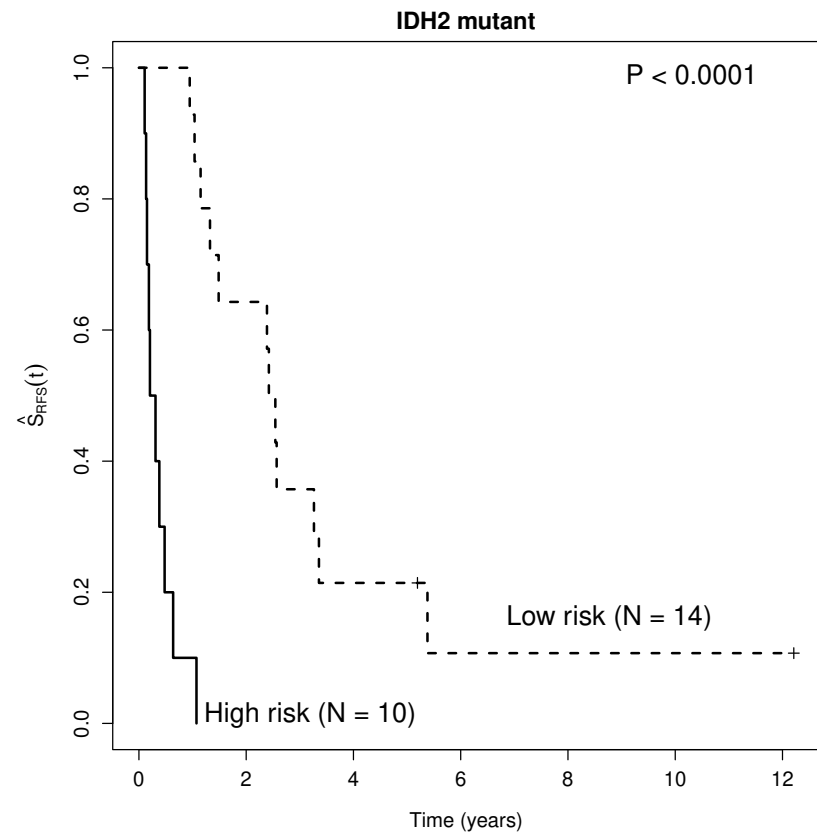
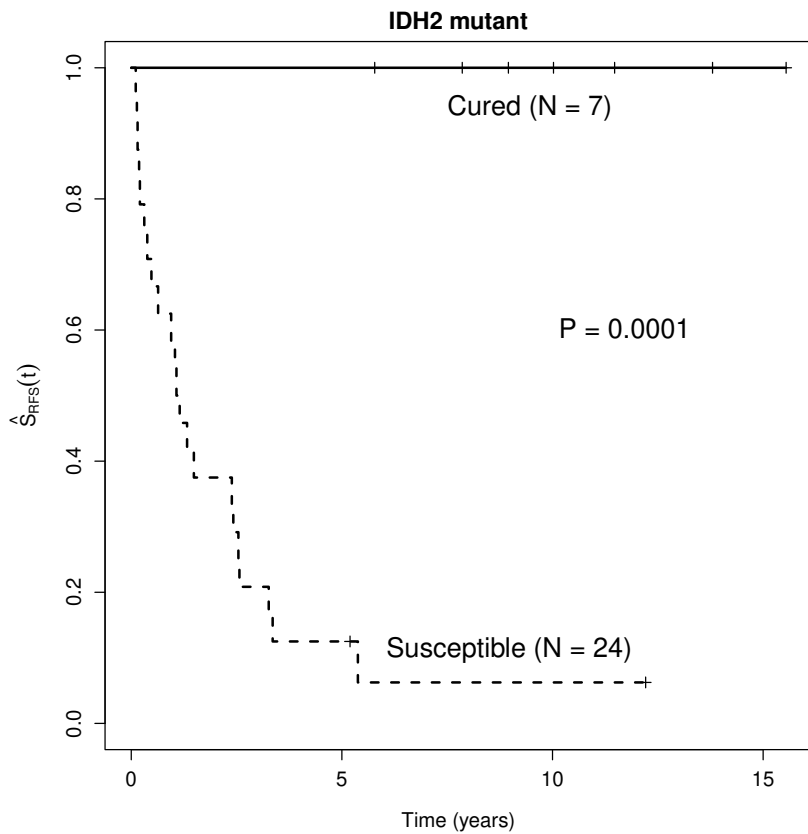
Supplementary Figure 7. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *FLT3*-TKD. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with *FLT3*-TKD.



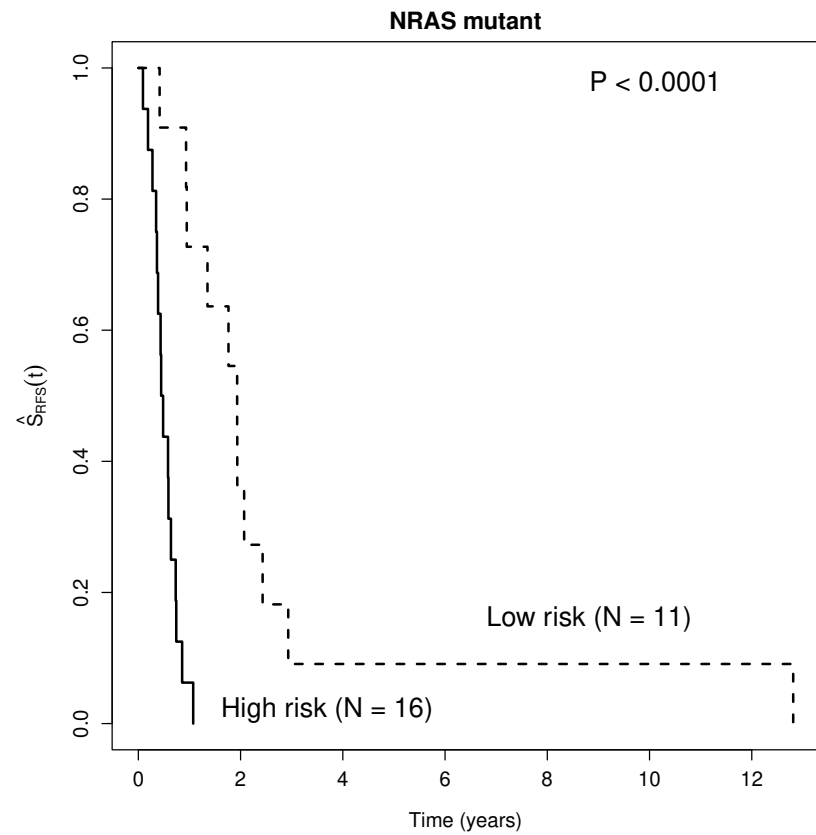
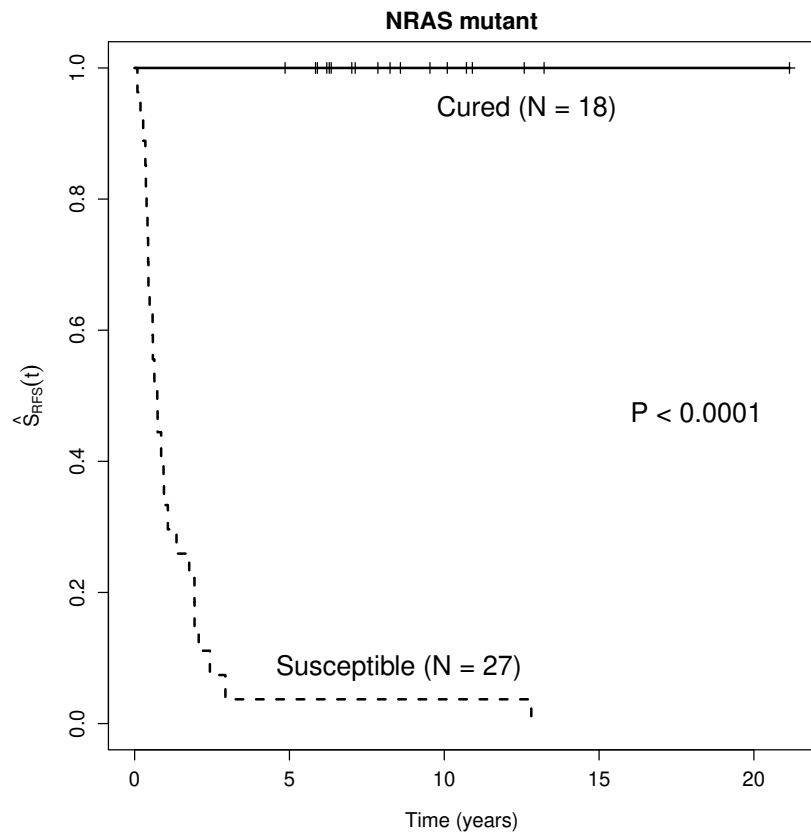
Supplementary Figure 8. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *IDH1* mutant. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with *IDH1* mutant.



Supplementary Figure 9. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *IDH2* mutant. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with *IDH2* mutant.



Supplementary Figure 10. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *NRAS* mutant. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with *NRAS* mutant.



Supplementary Figure 11. A) Kaplan-Meier curve for relapse-free survival for the training set stratified by those predicted to be cured versus susceptible using the semi-parametric penalized MCM among those with *PTPN11* mutant. B) Kaplan-Meier curve for relapse-free survival for those predicted to be susceptible in the training set stratified by high versus low risk of relapse using the semi-parametric penalized MCM among those with biallelic *PTPN11* mutant.

