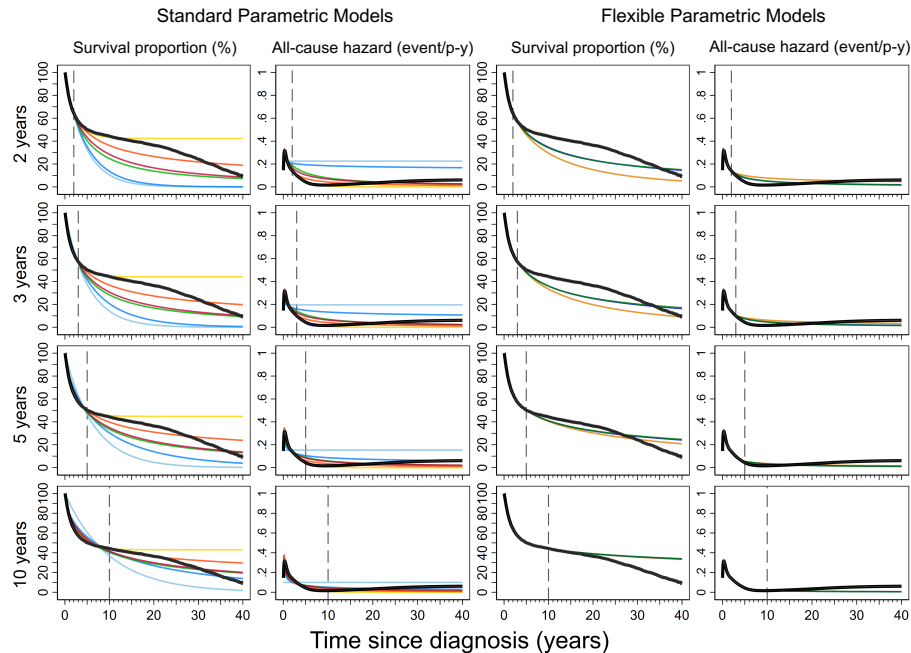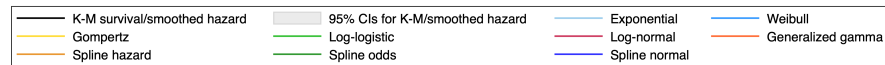# Colon Age 18-59

All-cause survival framework

Figure E1. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for colon cancer aged 18-59 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

Colon Age 60-69

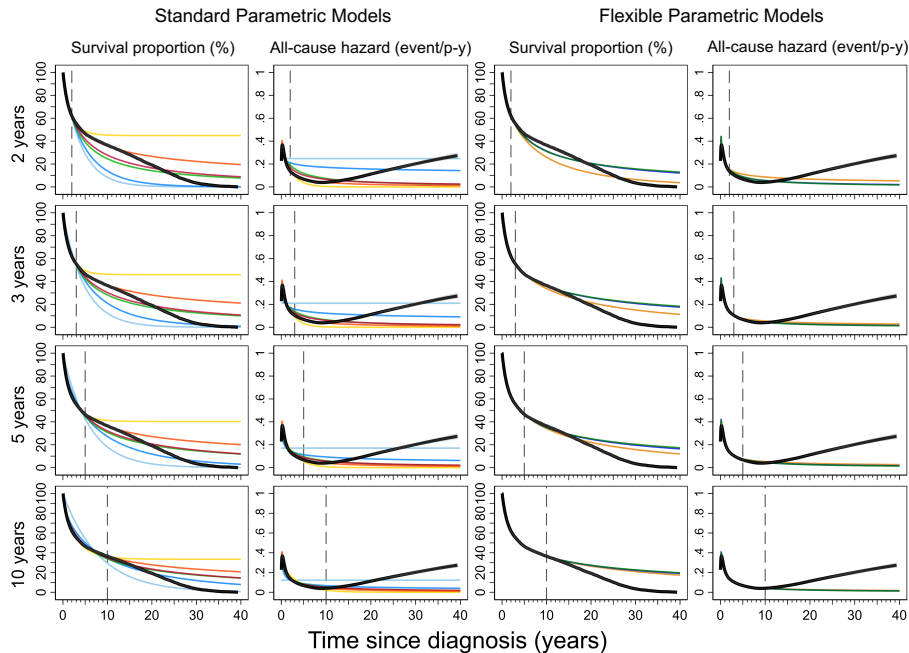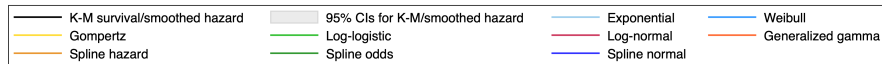## All-cause survival framework

Figure E2. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for colon cancer aged 60-69 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

Colon Age 70-99

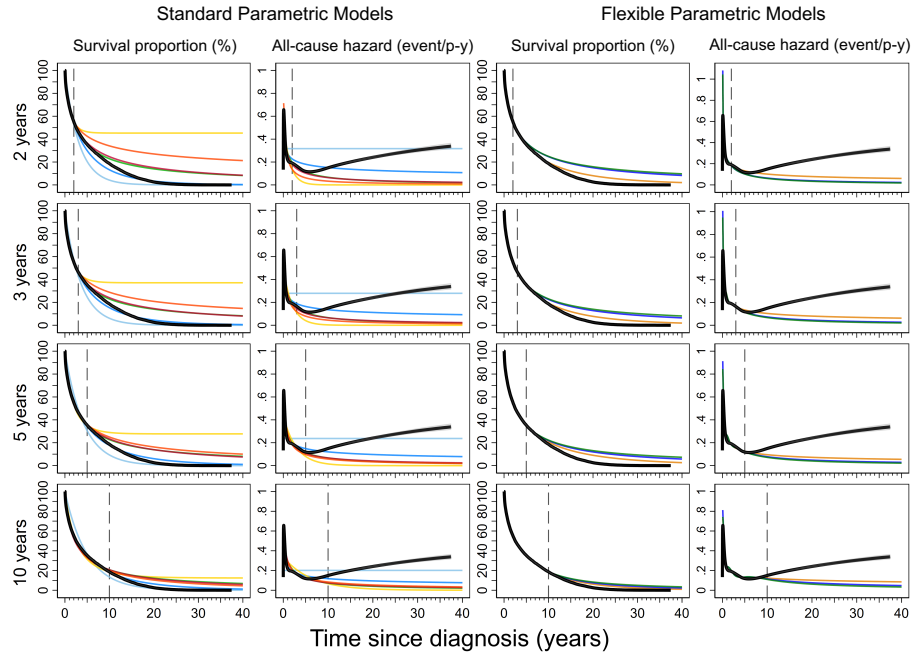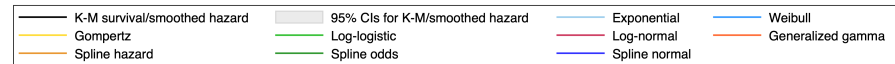## All-cause survival framework

Figure E3. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for colon cancer aged 70-99 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.
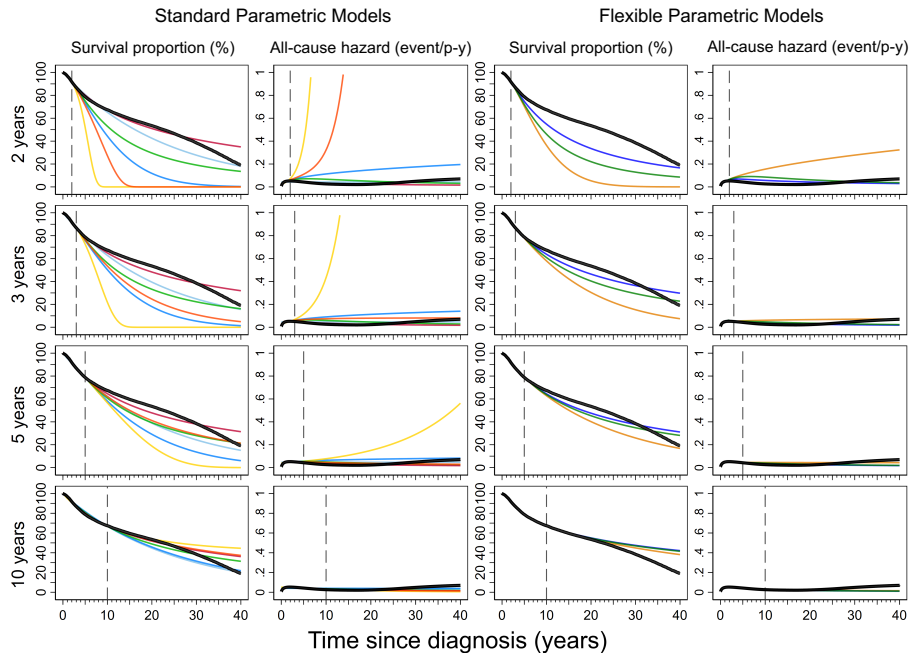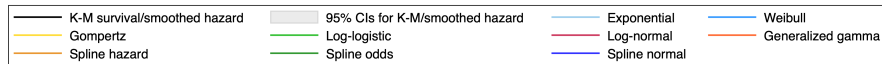
Figure E4. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for breast cancer aged 18-59 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

Breast Age 60-69

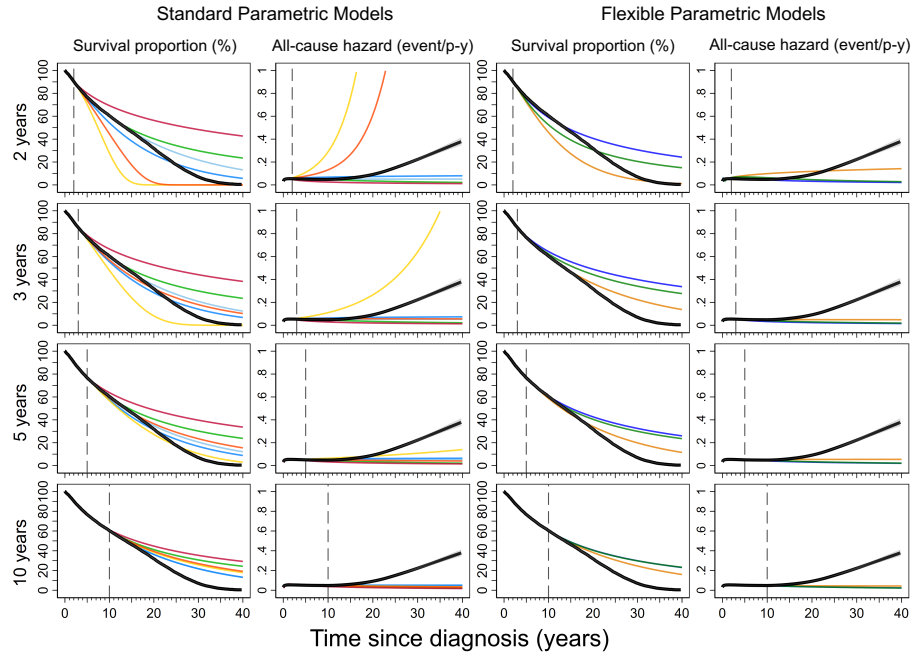## All-cause survival framework

Figure E5. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for breast cancer aged 60-69 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.
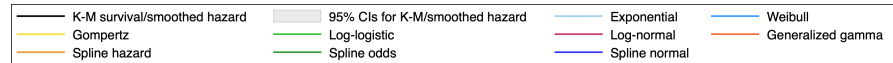
Breast Age 70-99

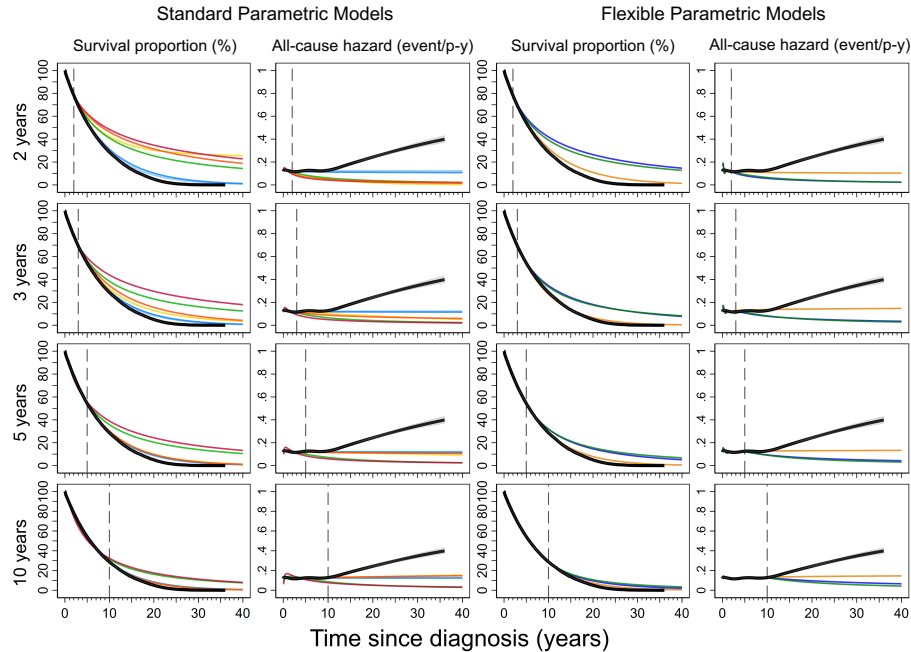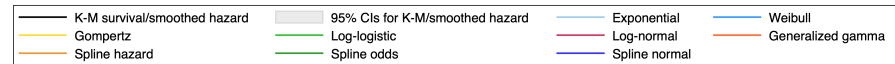## All-cause survival framework

Figure E6. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for breast cancer aged 70-99 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

Melanoma Age 18-59

All-cause survival framework

Standard Parametric Models

Survival proportion (%) All-cause hazard (event/p-y)

Flexible Parametric Models
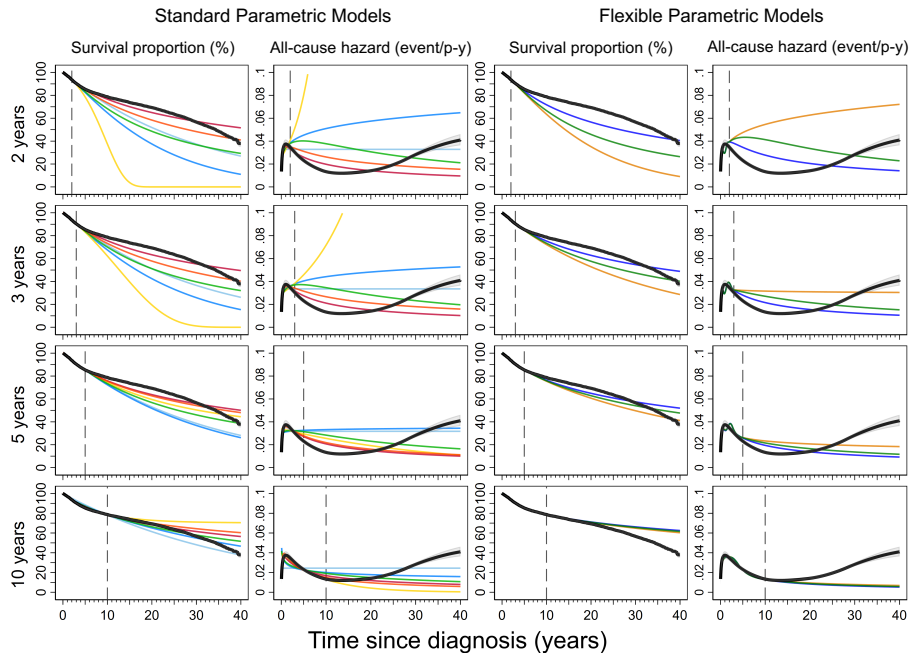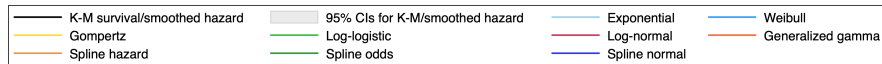
Survival proportion (%) All-cause hazard (event/p-y)

Figure E7. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for melanoma aged 18-59 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

K-M survival/smoothed hazard	95% CIs for K-M/smoothed hazard	Exponential Weibull
Gompertz	Log-logistic	Log-normal Generalized gamma
Spline hazard	Spline odds	Spline normal

Time since diagnosis (years)

Melanoma Age 60-69

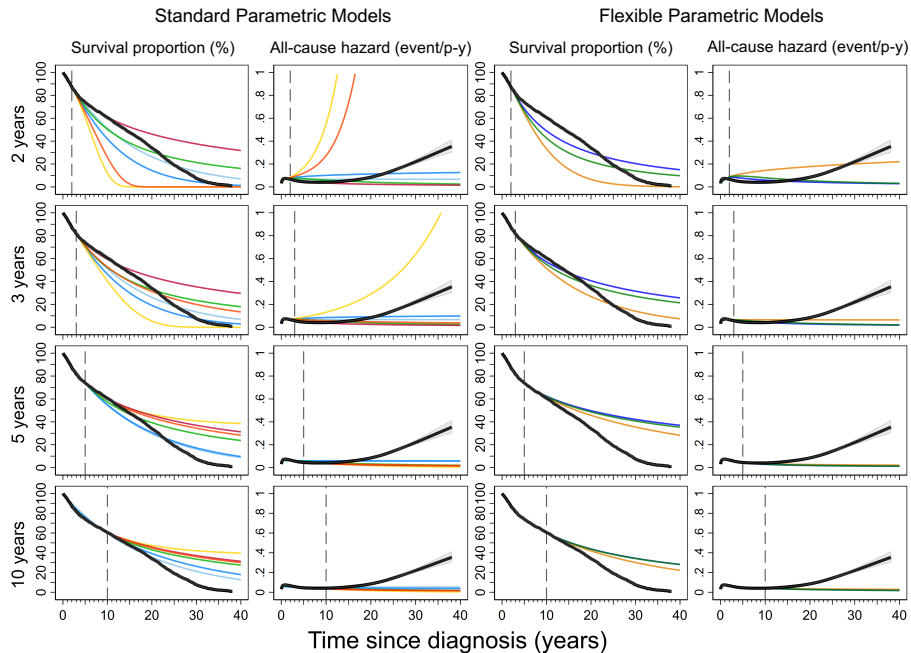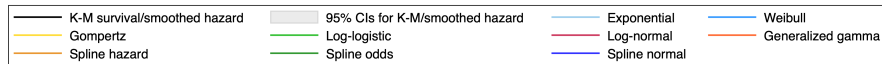## All-cause survival framework

Figure E8. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, melanoma aged 60-69 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

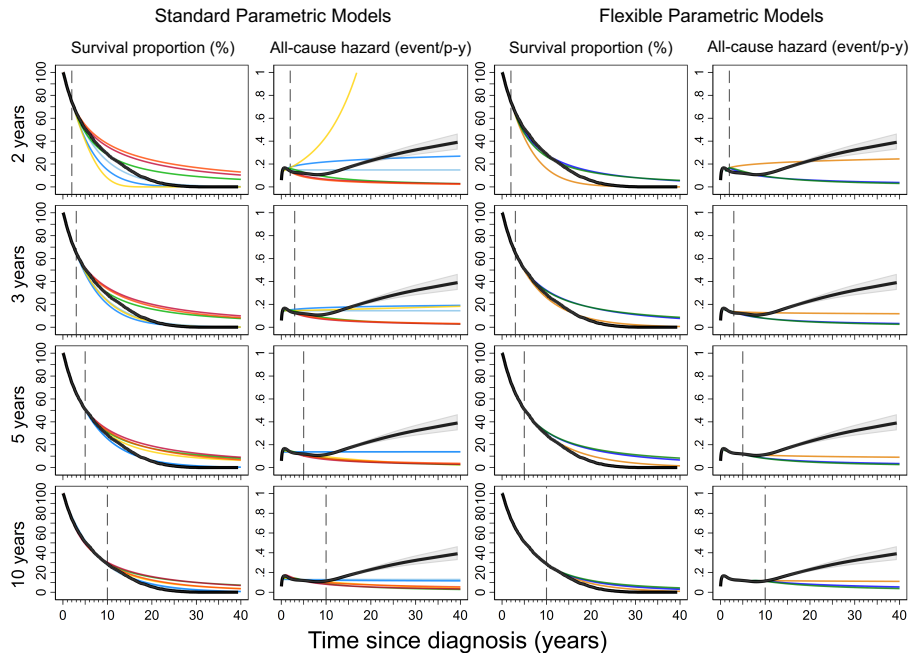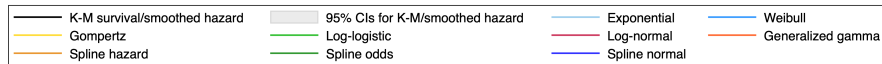# Melanoma Age 70-99

All-cause survival framework

Figure E9. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for melanoma aged 70-99 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

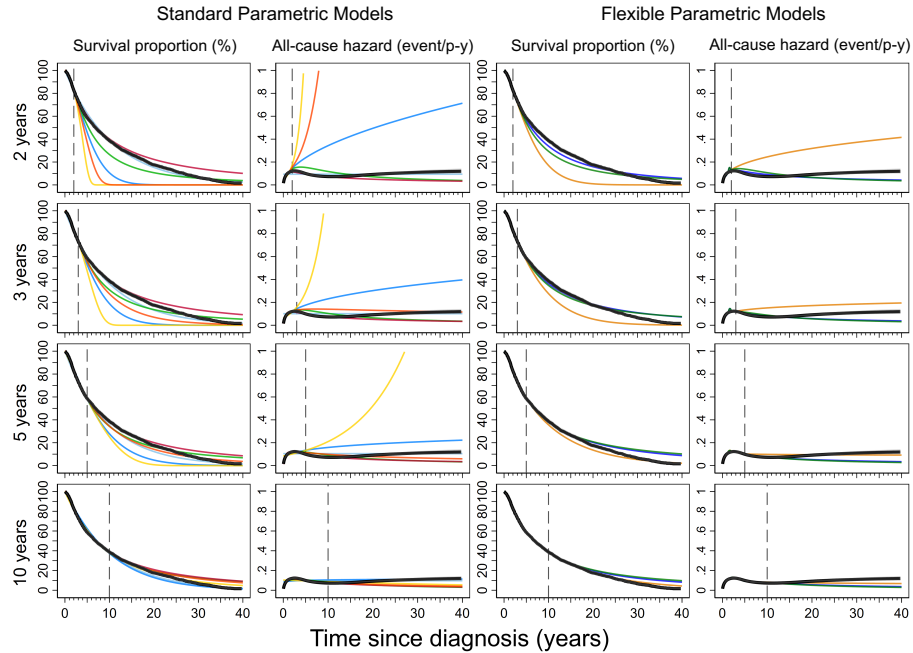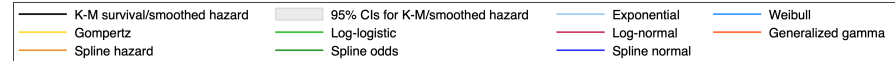# Prostate Age 18-59

All-cause survival framework

Figure E10. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for prostate cancer aged 18-59 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.
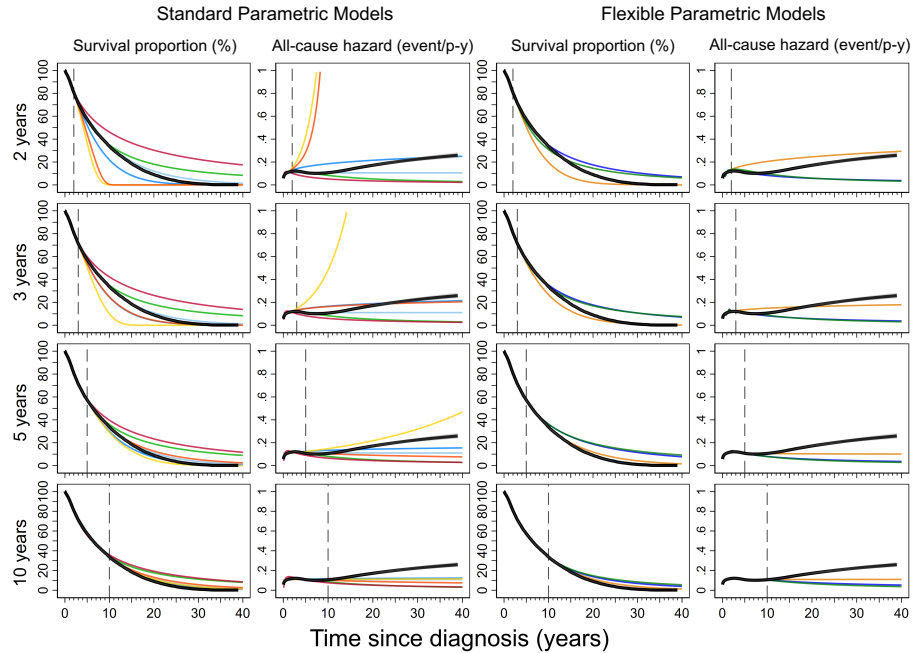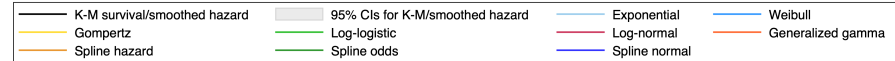
Figure E11. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for prostate cancer aged 60-69 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

Prostate Age 70-99
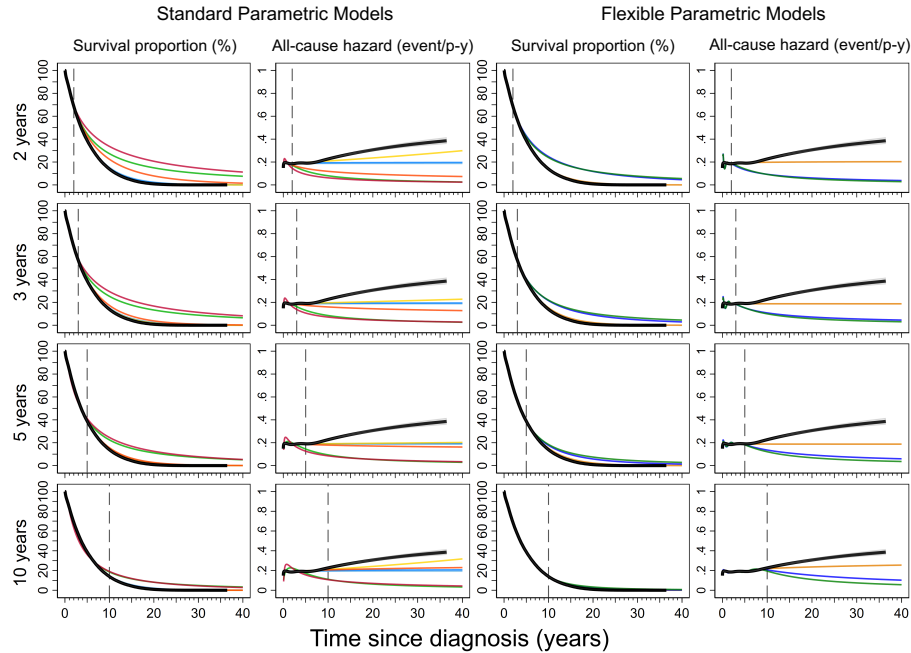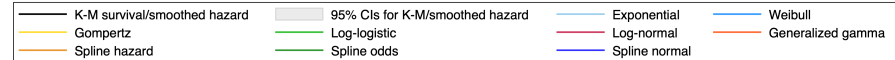
All-cause survival framework

Figure E12. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for prostate cancer aged 70-99 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.
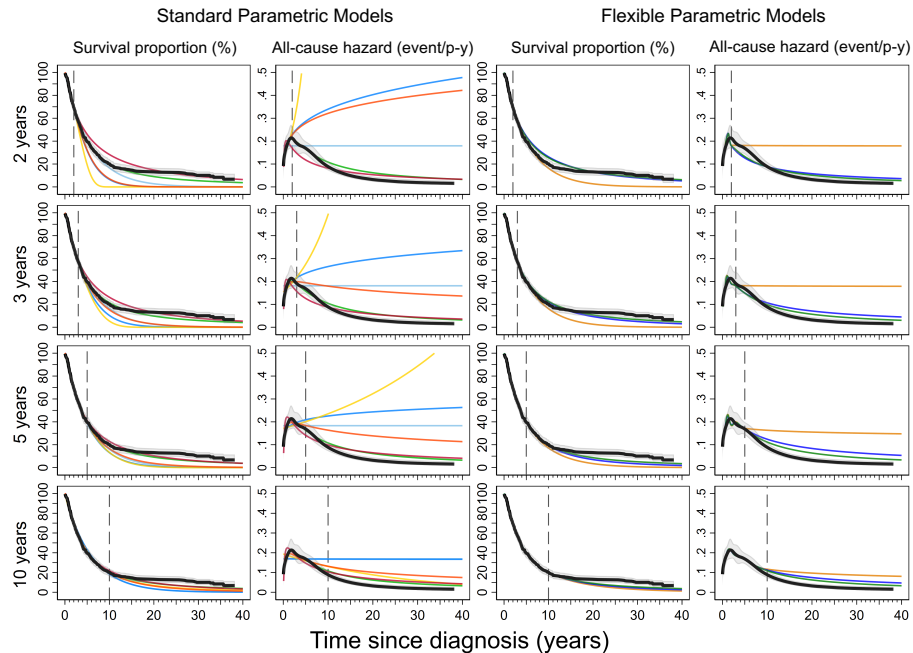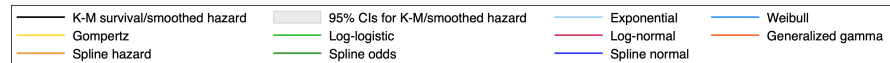
Figure E13. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for chronic myeloid leukemia (CML) aged 18-59 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.
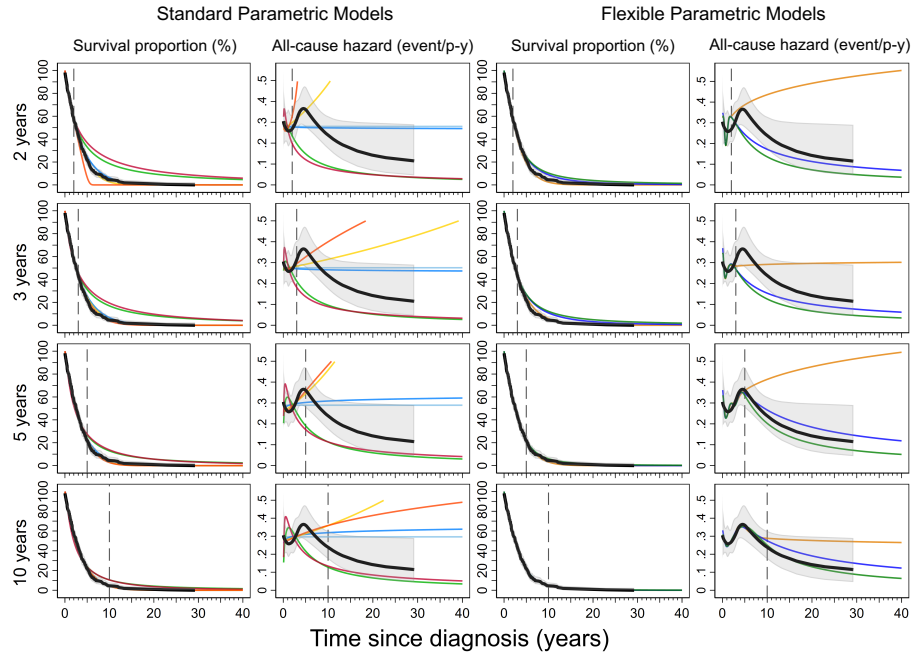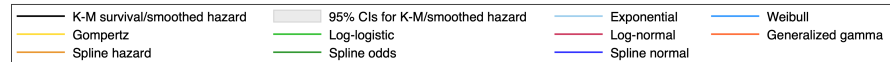
Figure E14. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for chronic myeloid leukemia (CML) aged 60-69 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.

CML Age 70-99

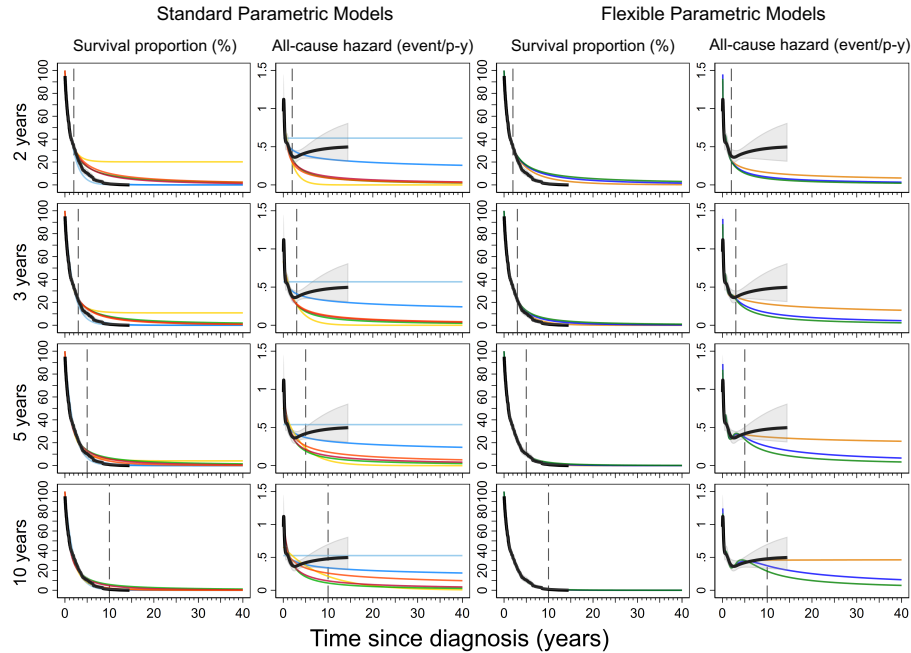## All-cause survival framework

Figure E15. Plots show the extrapolated survival and all-cause hazard functions within an all-cause survival framework by model, and follow-up time used for extrapolation to lifetime or 40 years, for chronic myeloid leukemia (CML) aged 70-99 years. The observed estimates (black lines) with 95% confidence intervals (CIs) (shaded areas) were from the Kaplan-Meier survival estimates or the smoothed all-cause hazard functions. K-M, Kaplan-Meier; p-y, person-year.