

Primary Class II Composite Survival Analysis and Medicaid Misalignment



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BACKGROUND

Dental caries is the most common chronic disease in childhood in the United States¹, with 45.8% of children experiencing caries². When restoring posterior interproximal caries in the primary dentition, providers have many restorative material options. When choosing the material, restoration longevity and safety are key considerations. There is strong evidence for the use of RBC in CL II restorations in primary teeth with studies noting 90% survival rate at 3 years³; however, recent studies indicate failure at 18 months⁴. To date, the Texas State Medicaid benefits reimburse clinicians that perform class II composites at a minimum of three-year intervals. Although this varies state to state, with Texas having one of the largest Medicaid populations in America, it is crucial for us to assess policy and push policy to align with evidence-based dentistry to benefit citizens as best as possible.

OBJECTIVE

- Determine the survival of Class II composite restorations in primary dentition over 24 months
- Determine variation in survival considering patient age and tooth type
- Determine if state Medicaid policy aligns with EBD

MATERIALS AND METHODS

1. An electronic chart review was conducted at two private dental clinics in Dallas, TX that met the following inclusion criteria:
 - Completed D2392 in Jan 2021-Feb 2022
 - Class II composite completed on a primary molar
2. Radiographs were reviewed at 6-month intervals for 24 months and evaluated restoration survival.
3. Review of Medicaid Dental Provider manual for restoration frequency.
4. The resulting interval-censored filling survival data were analyzed using Bayesian accelerated failure time model that included Age at placement, Tooth type and Sex as independent variables.

RESULTS

Patient Demographics	N
Patients	57
Teeth	142
Sex	
Male	61
Female	81
Age (years)	
3 to 5	41
6 to 8	79
9 to 11	22
Tooth Type	
D's	67
E's	75

Table 1. Patient demographics of study participants

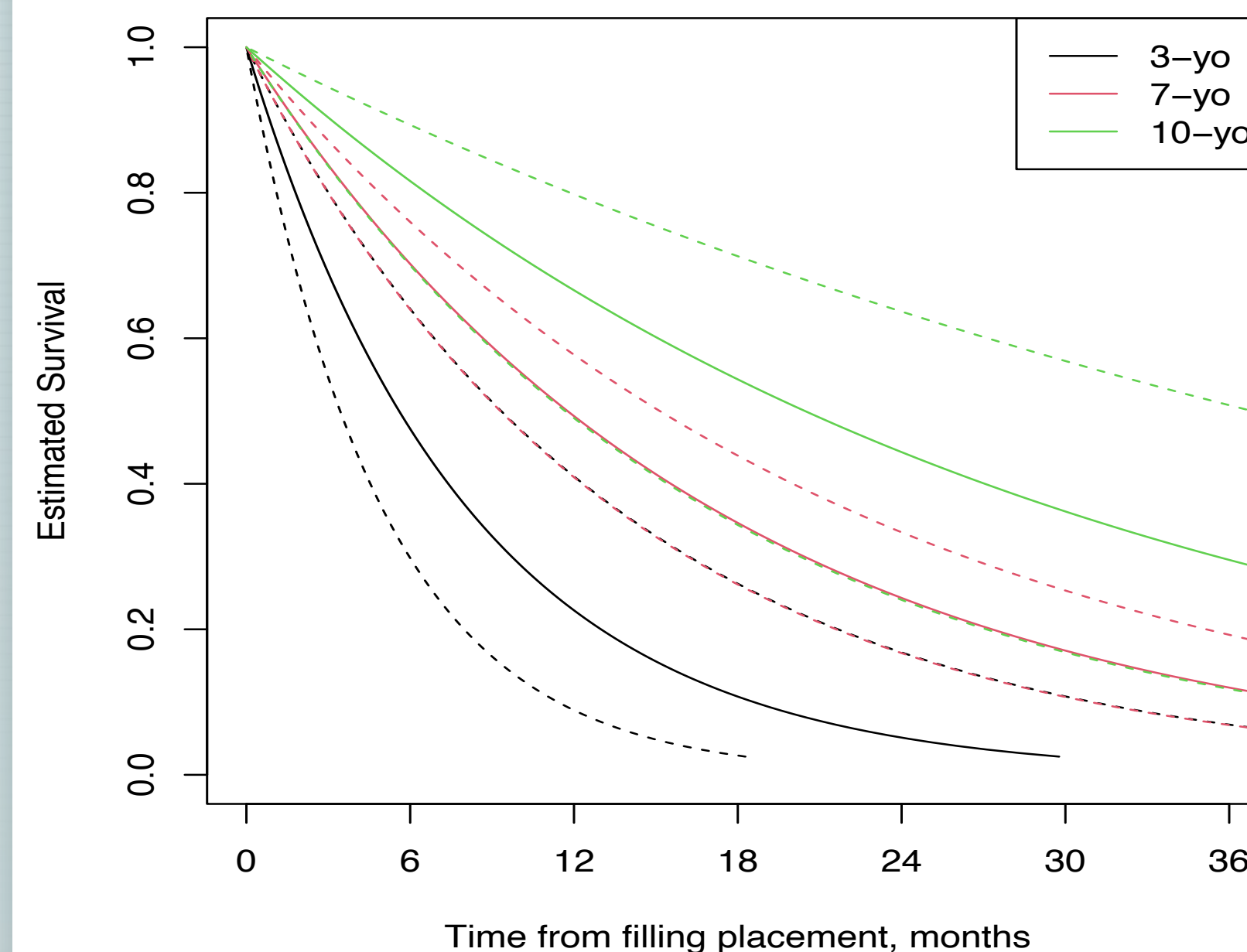


Fig 2. Survival of CL II composites among ages

Nonparametric MLE Survival Curve

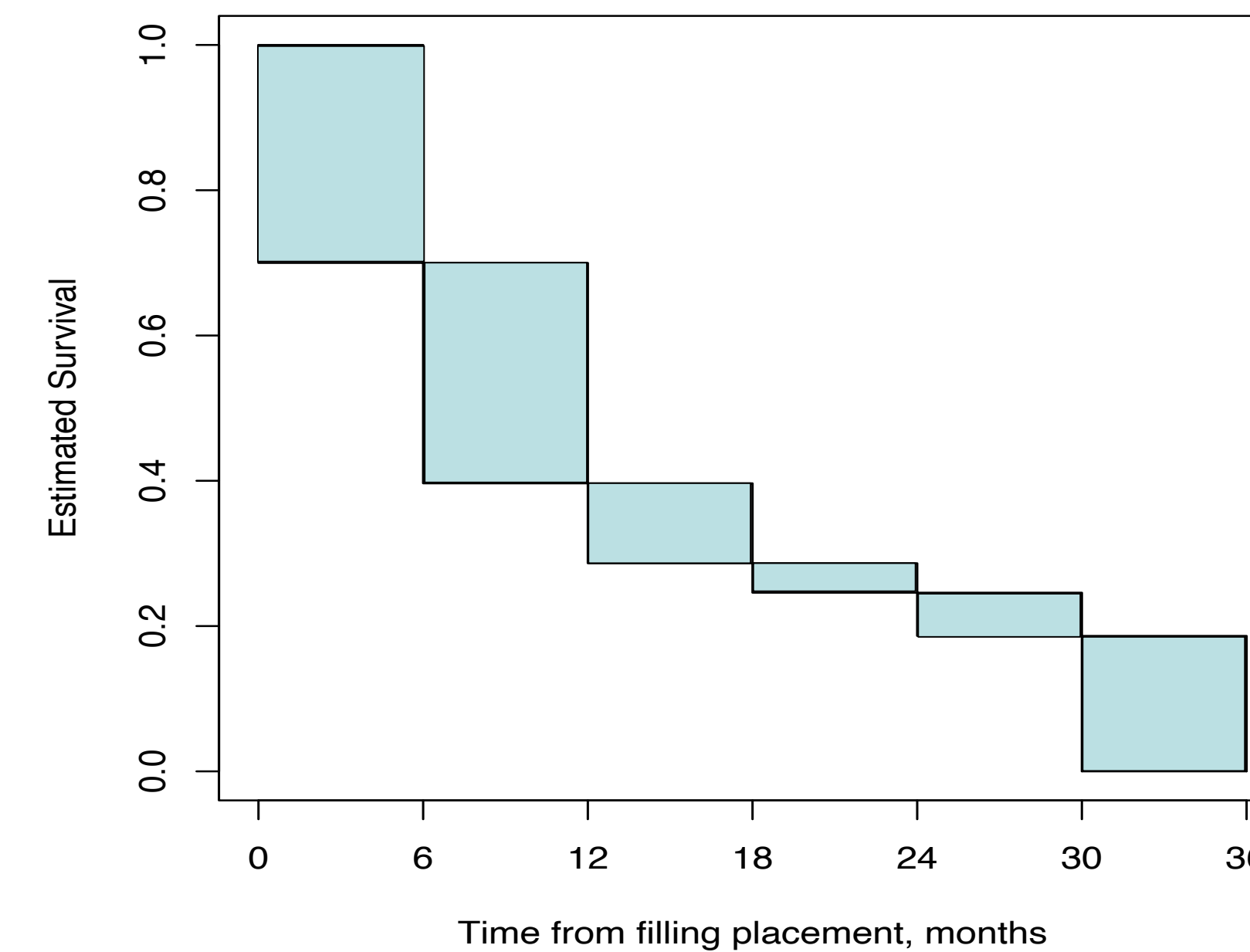


Fig 1. Survival of CL II composites with time

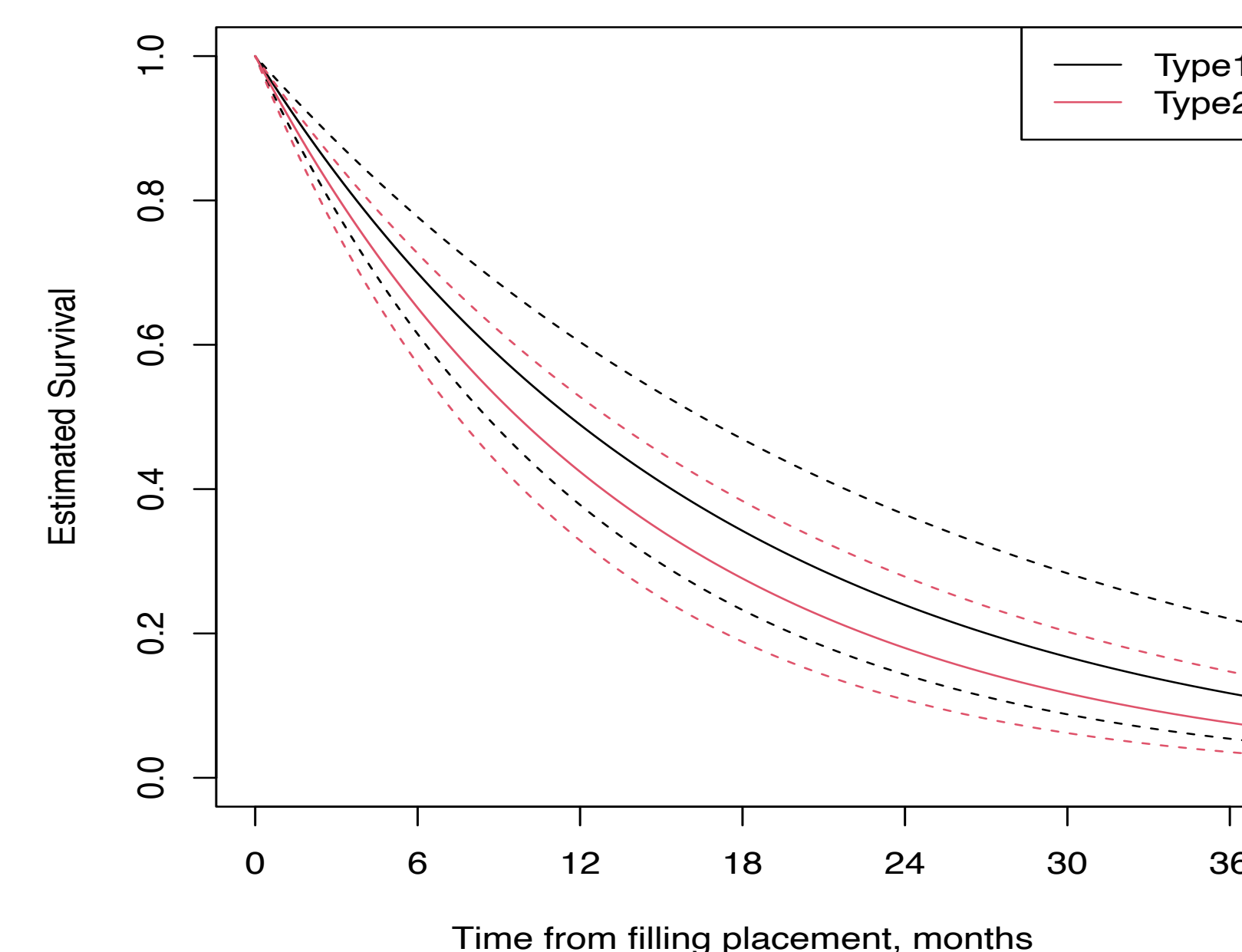


Fig 3. Survival of CL II composites in 1st and 2nd primary molars

RESULTS

- The percent of surviving class II restorations decreases exponentially with time
- The survival rate of Class II composite restorations in primary dentition increases with increase in patient age
- There is no statistically significant difference in survival between primary 1st and 2nd molar restorations

DISCUSSION

There is a misalignment between Texas State Medicaid coverage for composite restorations in primary dentition and clinical survival rates. Currently, frequency coverage is limited to once every 3 years with very few exemptions.

CONCLUSION

1. We recommend re-evaluation of the interval frequency for restoration placement under the current Medicaid managed care organization policy.
2. Although our data is from a small targeted project, it shows that children and practitioners are at the mercy of their Medicaid state policy which does not align with evidence-based dentistry.

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