



# Patterns of Birth Cohort-Specific Smoking Histories in Brazil

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## Background

- Tobacco consumption has decreased considerably in Brazil due to successful implementation of tobacco control policies, from 34.8% in 1989 to 12.6% in 2019
- However, recent data shows a more persistent level of smoking with smoking initiation even increasing for females
- Simulation models can evaluate the impact of tobacco control policies and guide decision-making to further reduce smoking in Brazil, but require detailed understanding of historical smoking patterns

## Objective

- To estimate patterns of smoking initiation, smoking cessation, current smoking prevalence, and smoking intensity by age, gender, and birth cohort for the population of Brazil

## Methods and Materials

- Current smokers have smoked more than 100 cigarettes and self-report currently smoking
- Former smokers have smoked more than 100 cigarettes and report that they currently do not smoke
- Never smokers are those reporting never having smoked or smoking <100 cigarettes in their lifetime
- Smoking intensity was measured by daily/weekly cigarette use converted into cigarettes per day (CPD)
- Data from the Global Adult Tobacco Survey (GATS) 2008 and the Brazilian National Survey of Health (PNS) 2018 and 2019 were pooled to create a nationally representative dataset (n=555,535)
- Age patterns in the non-nationally representative Surveillance System of Risk Factors for Chronic Diseases by Telephone Interviews (VIGITEL) 2006-2019 were separately analyzed, with the resulting age effects used as supplemental inputs to GATS and PNS analyses of ever smoking and smoking initiation
- Develop Age-Period-Cohort logistic regression models with constrained natural splines

## Methods and Materials (Cont.)

- Obtain gender-specific smoking parameters by fitting Age-Period-Cohort models with modeling parameters for each gender (males/females)
- Estimate current smoking prevalence using smoking initiation and cessation probabilities by age, birth cohort, and gender

## Results

Figure 1. Age-specific initiation probabilities by birth cohort

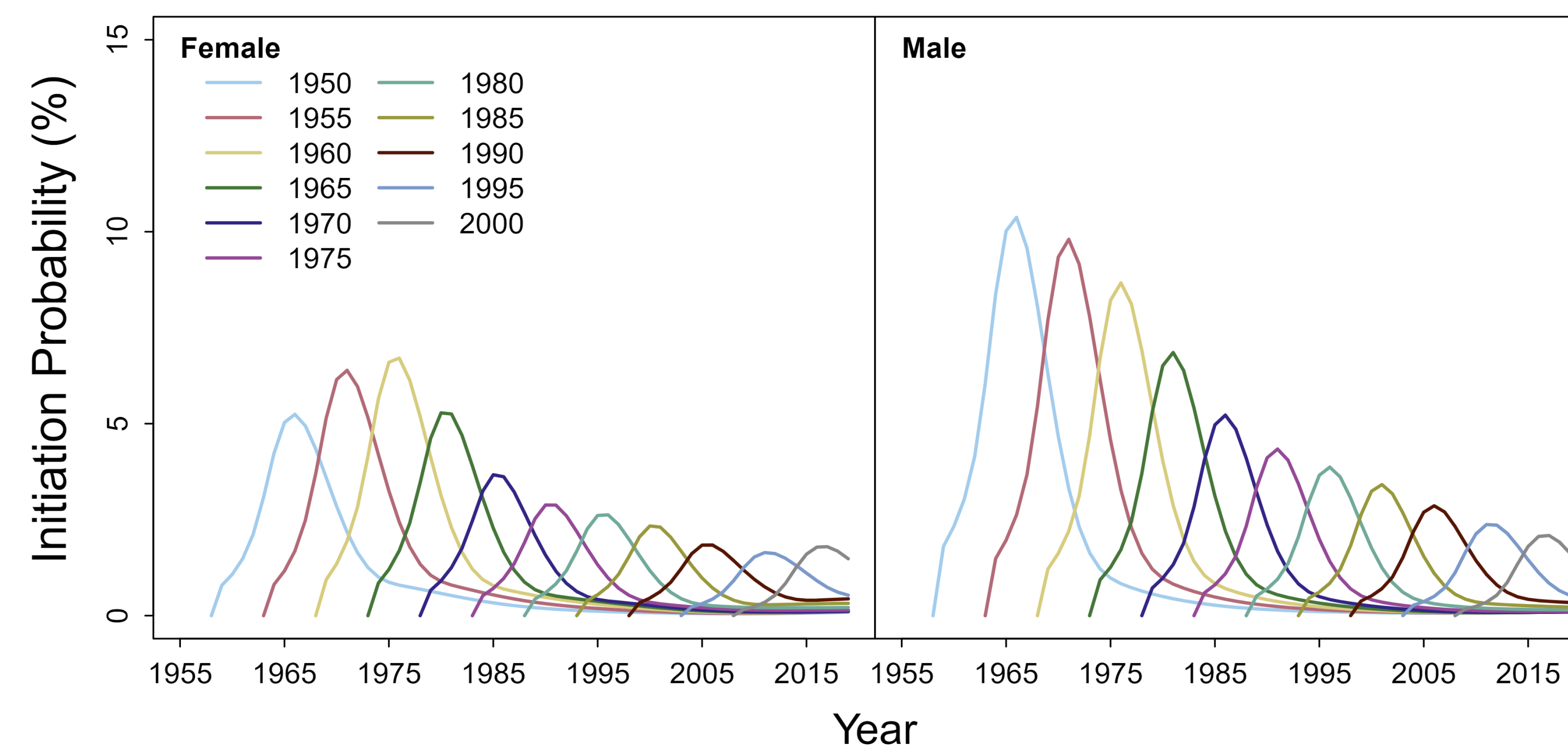
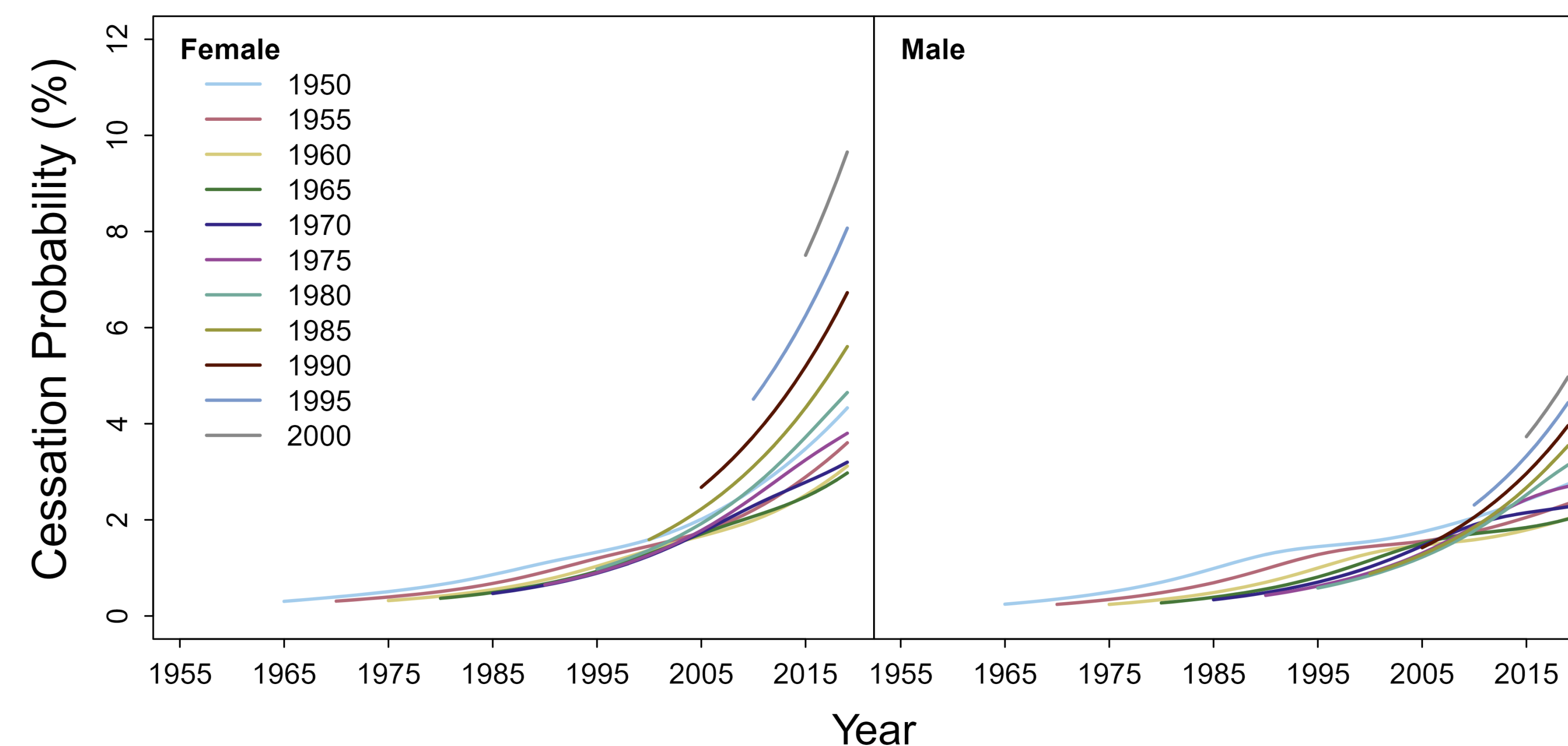


Figure 2. Age-specific cessation probabilities by birth cohort



## Results (Cont.)

Figure 3. Age-specific current smoker prevalence by birth cohort

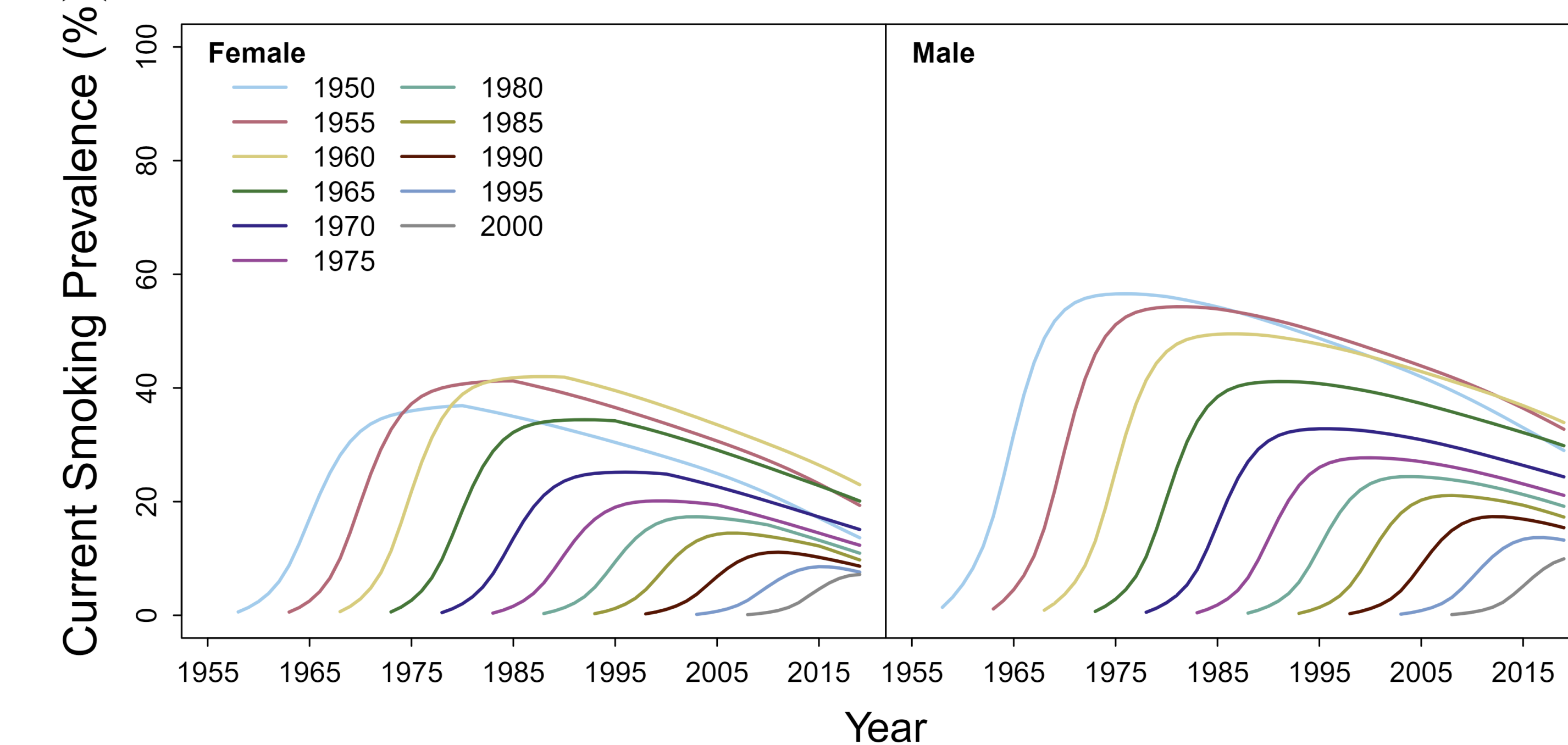
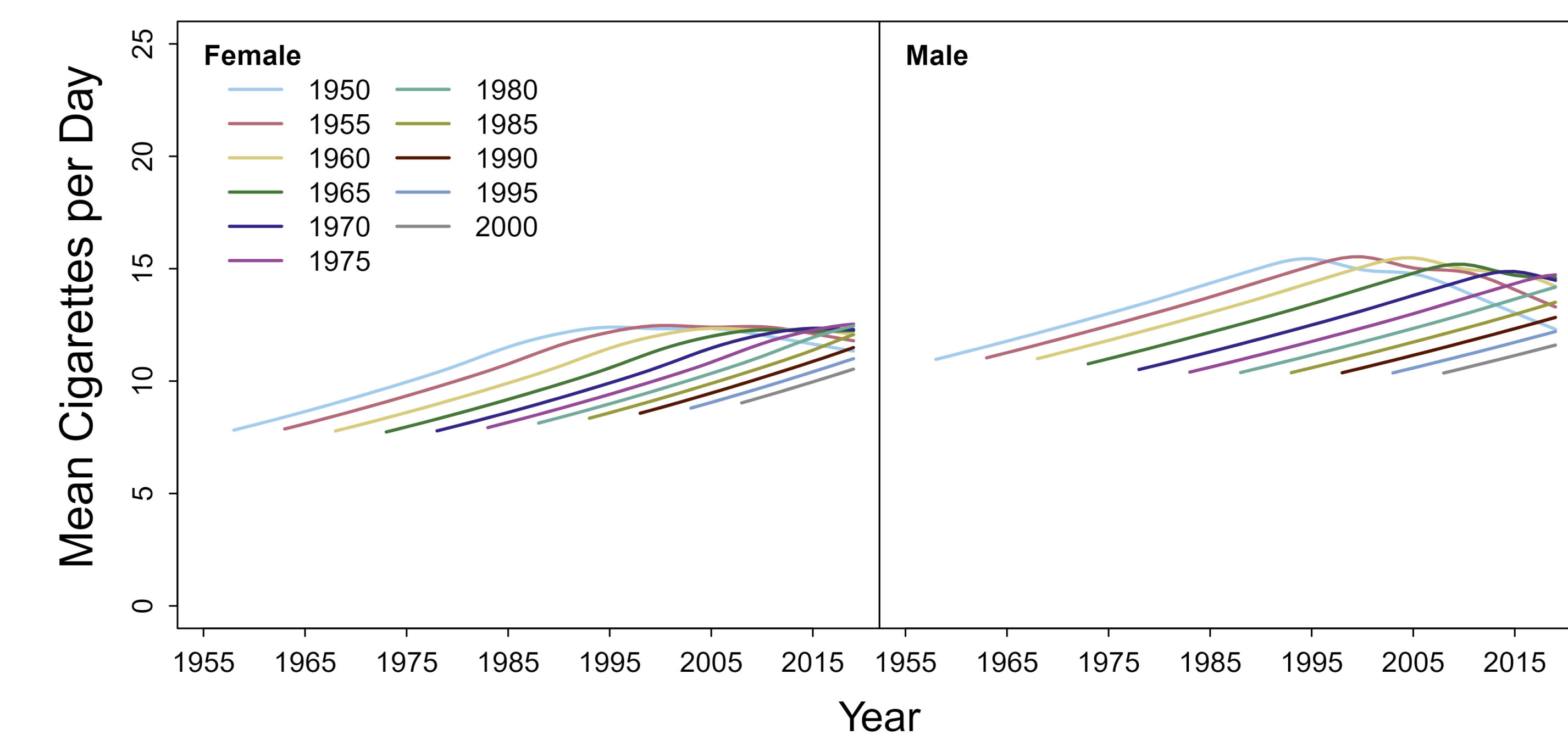


Figure 4. Age-specific mean CPD by birth cohort



## Conclusions

- Smoking initiation probabilities are decreasing for both genders, but females are showing slight increases in recent birth cohorts
- Cessation probabilities are increasing with recent birth cohorts for both genders
- Declines in smoking prevalence reflect both decreased initiation and increased cessation by birth cohort
- Males have higher estimated CPD than females across cohorts, however, peaks in mean CPD have remained constant across female birth cohorts
- The estimated smoking parameters will inform the development of tobacco simulation modeling in Brazil