

The impact time since product change on transitions in cigarette and e-cigarette use in a cohort of cigarette and dual users

TCORS 2.0 | Center for the Assessment of Tobacco Regulations [CAStoR]
 University of Michigan & Georgetown University

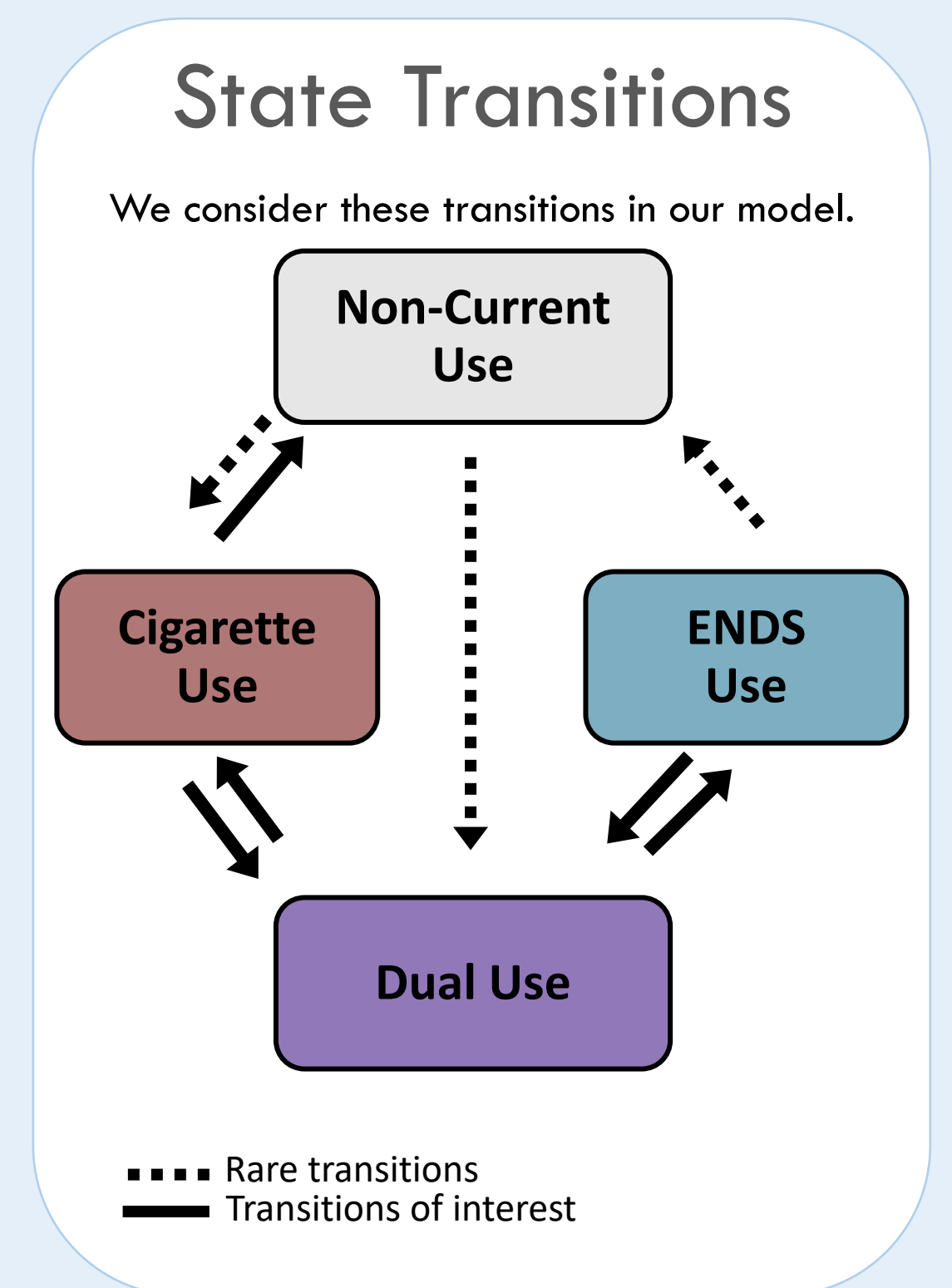
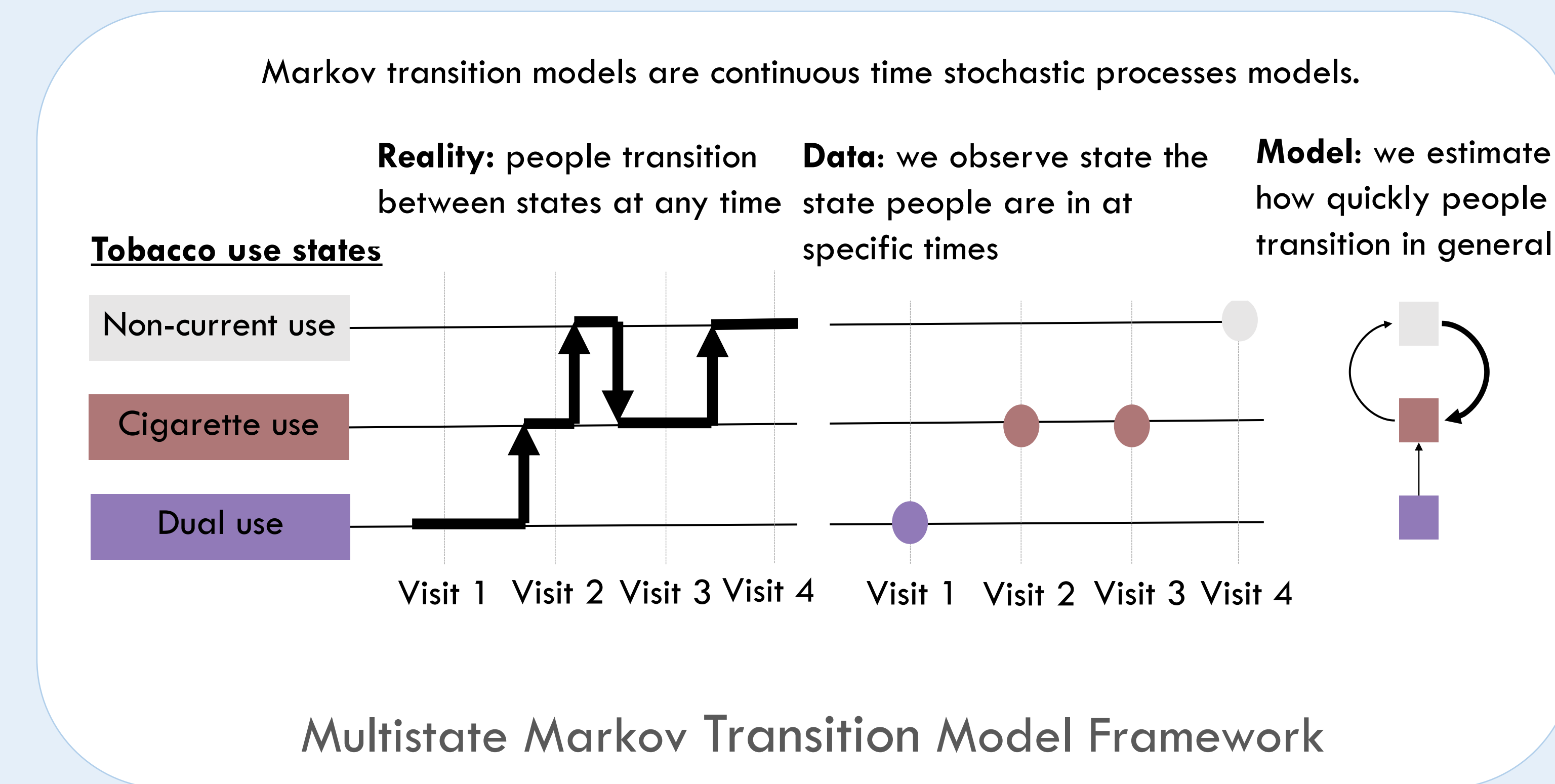
Fatema Shafie-Khorassani, Megan E. Piper, Douglas E. Jorenby, Timothy B. Baker, Todd Hayes-Birchler, Rafael Meza, Andrew F. Brouwer
 Contact: brouweaf@umich.edu

Introduction

- Understanding how people transition between electronic nicotine delivery systems (ENDS), cigarettes, and dual use is important for designing effective interventions.
- Cigarette or e-cigarette users who recently started or stopped using a product may behave differently than long-term users.
- To understand the impact of time since product change, we can compare transition rates between ENDS, cigarette use, and dual product use by length of time since product change.

Methods

- Univariable multistate Markov model estimate hazard rates of transition as a function of time since last transition.
- Length of time since last transition:
 - Excluded data before first observed transition.
 - Categorized length of time since last transition into: 5 categories for analysis: <2 months, 2 to <4 months, 4 to <6 months, 8 to <14 months, and 14 to 22 months.

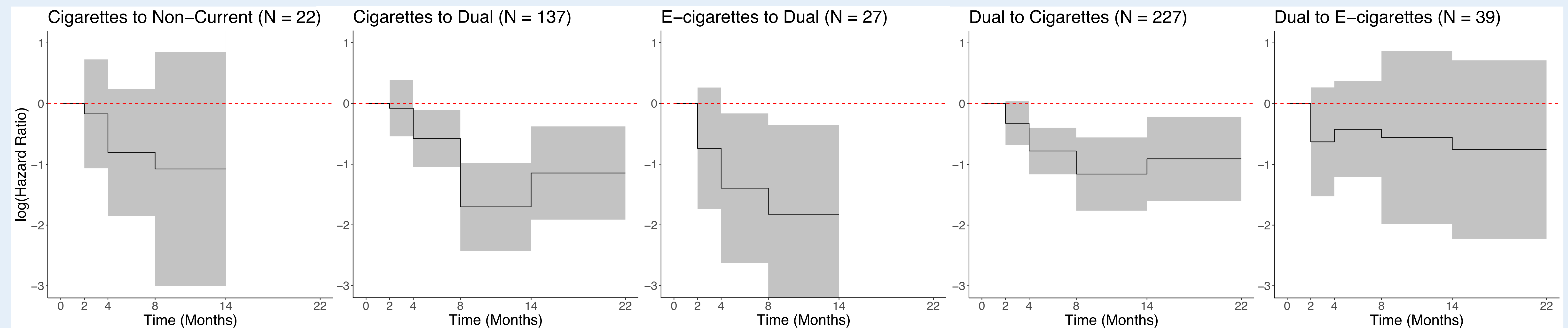


Data

Exhale Study

- Longitudinal cohort study in Wisconsin from 2015-2017.
- Cohort: 422 adult daily cigarette users and dual cigarette and ENDS users who were not intending to quit.
- Users were followed up every two months for two years.
- 207 users started or stopped using cigarettes or e-cigarettes at least once.
- Tobacco product use states were determined by self-reported abstinence in the past 30 days and users were categorized into four categories:
 - Non-current use, cigarette only use, e-cigarette only use, or dual use of cigarettes and e-cigarettes.

Results



| Transition | Months in State | | | | | | | | | | | | Total |
|--------------|-----------------|----------|----------|----------|--------|---------|--------|--------|--------|--------|--------|-------|-------|
| | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | |
| Cig → None | 8 (272) | 7 (193) | 3 (137) | 2 (103) | 1 (79) | 1 (66) | 0 (46) | 0 (39) | 0 (27) | 0 (24) | 0 (11) | 0 (0) | 22 |
| Cig → Dual | 53 (272) | 35 (193) | 18 (137) | 14 (103) | 4 (79) | 3 (66) | 2 (46) | 5 (39) | 0 (27) | 2 (24) | 1 (11) | 0 (0) | 137 |
| E-cig → Dual | 18 (46) | 5 (22) | 2 (14) | 0 (10) | 1 (10) | 1 (8) | 0 (6) | 0 (4) | 0 (4) | 0 (2) | 0 (2) | 0 (0) | 27 |
| Dual → Cig | 116 (301) | 49 (155) | 23 (98) | 14 (69) | 3 (45) | 11 (36) | 2 (22) | 1 (16) | 4 (13) | 1 (6) | 1 (5) | 2 (3) | 227 |
| Dual → E-cig | 17 (301) | 5 (155) | 4 (98) | 6 (69) | 3 (45) | 1 (36) | 1 (22) | 0 (16) | 0 (13) | 0 (6) | 1 (5) | 1 (3) | 39 |

Key Findings

- There is typically a period after starting or stopping a cigarette or e-cigarette during which further transition is more likely.
- Most of the observed transitions represented a reversion to a recent previous pattern of use.
- Transition rates significantly decreased by length of time in state for transitions from: cigarette only to dual use, e-cigarette only to dual use, and dual use to cigarettes only.
- Results may inform smoking cessation or harm reduction strategies by promoting repeated quit attempts or longer e-cigarette trial periods.