



AGE STRUCTURE AND MALARIA RATES IN THE LEGAL AMAZON: A DEMOGRAPHIC PERSPECTIVE

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BACKGROUND

- Progress in malaria burden reduction in Brazil: rates fell 67% in the amazon region between 2007–2020.
- Rapid population aging: falling fertility and increased longevity
- Changes in malaria rate schedule: from young to working-age populations

OBJECTIVES

- Have changing malaria rates been affected by changes in population structure?
- If so, how much? Are there differences across states and for men and women?

DATA

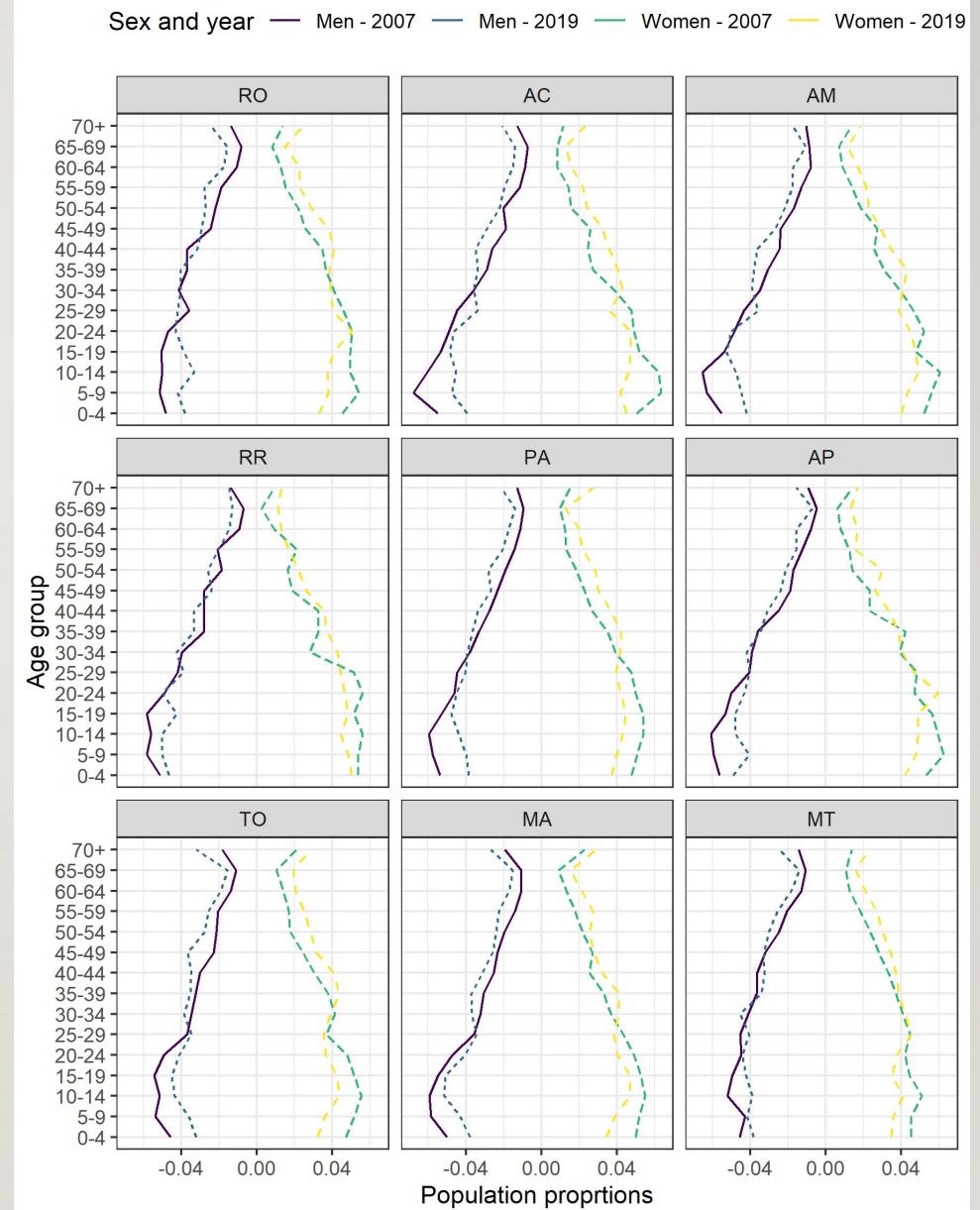
- Period: 2007–2019
- Malaria: Malaria Epidemiological Surveillance Information System (SIVEP–Malaria), managed by the Ministry of Health
- Population: National Household Sample Surveys (PNAD 2007–2015, PNADC 2015–2019), managed by the Brazilian Institute of Geography and Statistics (IBGE).

METHOD

- Data visualizations for age structures and malaria rates
- Decomposition of rates by state and sex

RESULTS

Age and sex structure change
between 2007 and 2019

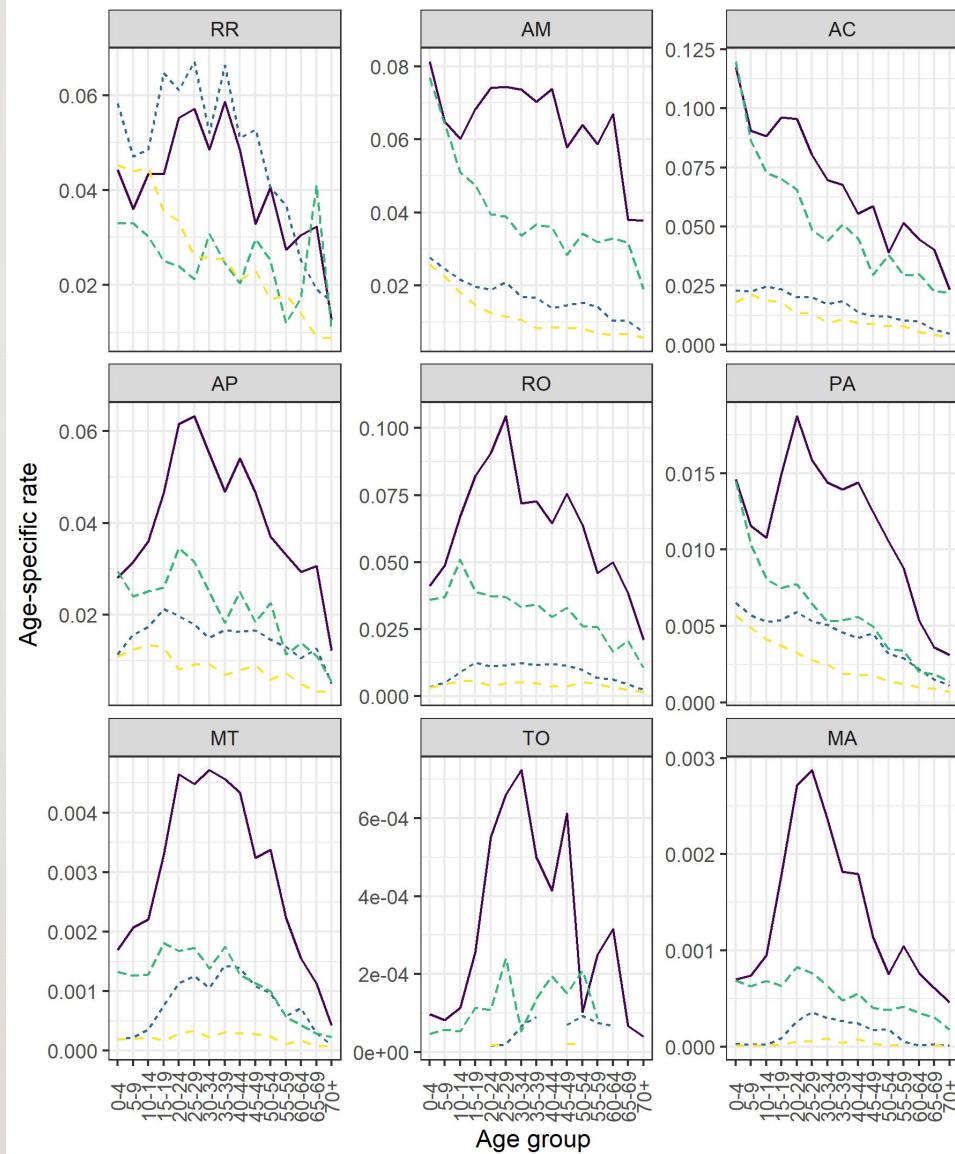


Source: Brazilian Institute of Geography and Statistics and Ministry of Health.

RESULTS

Malaria rates by year and sex
between 2007 and 2019

Sex and year — Men - 2007 — Men - 2019 — Women - 2007 — Women - 2019



Source: Brazilian Institute of Geography and Statistics and Ministry of Health.

RESULTS

Decomposition of rates into ages and rate contributions, by sex and state, for 2007 and 2019.

Table 1: Age and rate decomposition by State in the Legal Amazon, 2007 and 2019

State	Age	Rate	Age Contribution	Rate Contribution
Men				
RO	0.0006	0.0284	1.9%	98.1%
AC	0.0025	0.0295	7.7%	92.3%
AM	0.0006	0.0243	2.2%	97.8%
RR	0.0006	-0.0044	-16.8%	116.8%
PA	0.0003	0.0040	6.5%	93.5%
AP	0.0005	0.0133	3.8%	96.2%
TO	0.0000	0.0001	-5.5%	105.5%
MA	0.0000	0.0007	-0.3%	100.3%
MT	0.0000	0.0012	2.5%	97.5%
Women				
RO	0.0004	0.0150	2.8%	97.2%
AC	0.0012	0.0241	4.9%	95.1%
AM	0.0009	0.0154	5.3%	94.7%
RR	0.0002	-0.0026	-6.3%	106.3%
PA	0.0002	0.0019	9.9%	90.1%
AP	0.0000	0.0077	0.3%	99.7%
TO	0.0000	0.0000	-6.0%	106.0%
MA	0.0000	0.0003	3.5%	96.5%
MT	0.0000	0.0005	2.6%	97.4%

Source: Brazilian Institute of Geography and Statistics and Ministry of Health.

DISCUSSION & CONCLUSIONS

- Increase of working age population relative to under 15 means different risk profiles,
 - Require different strategy for prevention/control.
- Age contributions increase going forward, as rates tend to decline slowly.
- Mobile adult populations
 - Investigate risks of reintroduction and dynamics of case importation.
 - better data on population mobility in the Legal Amazon.

ACKNOWLEDGMENT

BILL & MELINDA
GATES *foundation*



This work is supported by:

- Bill & Melinda Gates Foundation [ID INV 003970];
- Brazilian Ministry of Health, Brazilian National Council for Scientific and Technological Development [443048/2019-3];
- NVIDIA corporation for supporting our research with a TITAN Xp GPU donation;

**THANK YOU
FOR
WATCHING**