BRAZIL’S FAMILY HEALTH STRATEGY (FHS): FACTORS ASSOCIATED WITH COVERAGE EXPANSION OVER 15 YEARS (1998-2012)

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FHS in Brazil

- Declines in infant mortality
- Decline in avoidable hospitalizations
- Better health care access and utilization
- Reduction of social inequalities in healthcare access
FHS in Brazil

- Despite positive impacts, coverage is not universal
  - In 2012 about 50% coverage
- Some barriers to expansion are known
  - Shortage of professionals, budget constraints, remoteness
- Determinants of uptake and expansion?
  - Municipal analysis
Conceptual framework

- Economic development
  - Population size
  - Regional characteristics
  - Geographical isolation
  - Political context
  - Healthcare supply
  - Healthcare needs/access
  - Other sources of healthcare

FHS coverage
# Conceptual framework - Data

<table>
<thead>
<tr>
<th>Domains</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic Development</strong></td>
<td>GDP per capita (at 2002 current prices)</td>
</tr>
<tr>
<td></td>
<td>Proportion of the population covered by Bolsa Familia (*)</td>
</tr>
<tr>
<td><strong>Healthcare Supply</strong></td>
<td>Doctors per 1,000 inhabitants</td>
</tr>
<tr>
<td></td>
<td>Beds and per 1,000 inhabitants</td>
</tr>
<tr>
<td><strong>Geographical Isolation</strong></td>
<td>Distance from municipalities with hospitals larger than 100 beds (meters)</td>
</tr>
<tr>
<td></td>
<td>Population density (pop/Km²)</td>
</tr>
<tr>
<td><strong>Healthcare needs/access</strong></td>
<td>Proportion of deaths with cause diagnosed as non-defined</td>
</tr>
<tr>
<td><strong>Political Context</strong></td>
<td>Two dummy variables for parties affiliations</td>
</tr>
<tr>
<td></td>
<td>1. Mayor’s party the same as the Governor’s</td>
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<tr>
<td></td>
<td>2. Mayor’s party the same as the President’s</td>
</tr>
<tr>
<td><strong>Regional characteristics</strong></td>
<td>Dummy variables for each of the 27 Federal Units</td>
</tr>
<tr>
<td><strong>Population size</strong></td>
<td>5 dummy variables according to 1998 population size</td>
</tr>
<tr>
<td><strong>Other sources of healthcare</strong></td>
<td>Proportion of the population covered by private health insurance (*)</td>
</tr>
</tbody>
</table>

(*) only available from 2004-2012
FHS coverage across Brazilian Municipalities

(A) 1998
(B) 2002
(C) 2008
(D) 2012

- Zero coverage
- 0.001-0.249
- 0.250-0.499
- 0.500-0.749
- 0.750-1.000

Region
State boundaries

Map showing coverage across different regions of Brazil, with changes over the years 1998, 2002, 2008, and 2012.
Density by region

1998

Center-West

Northeast

North

Southeast

South

kernel = epanechnikov, bandwidth = 0.0222

kernel = epanechnikov, bandwidth = 0.0312

kernel = epanechnikov, bandwidth = 0.0355

kernel = epanechnikov, bandwidth = 0.0545

kernel = epanechnikov, bandwidth = 0.0223
Density by region

1998

Center-West

Density

Northeast

South

2002

Density

North

Southwest

Proportion of population

kernel = epanechnikov, bandwidth = 0.0222

kernel = epanechnikov, bandwidth = 0.0312

kernel = epanechnikov, bandwidth = 0.0355

kernel = epanechnikov, bandwidth = 0.0545

kernel = epanechnikov, bandwidth = 0.0873

kernel = epanechnikov, bandwidth = 0.0802

kernel = epanechnikov, bandwidth = 0.0995

kernel = epanechnikov, bandwidth = 0.0810

kernel = epanechnikov, bandwidth = 0.0947

SCHOOL OF PUBLIC HEALTH
Department of Global Health and Population
Density by region

Proportion of population covered by FHS
Density by population size
Density by population size

Proportion of population covered by FHS
Coverage - Region & Population Size

Proportion of the population covered by the Family Health Strategy

- Region & Population Size:
  - < 5,000
  - 10,000-19,999
  - 20,000-49,999
  - ≥ 50,000
Correlates of uptake and expansion

- Population size - inversely associated with initial uptake and expansion
  - Larger municipalities tend to start with lower coverage and to progress with slow expansion

- Political alignment of Mayors & Governors favored both adoption & expansion
  - Only observed for small municipalities

- Private health insurance was a disincentive for expansion

- Municipalities with higher gaps in healthcare access showed a negative association with uptake (difficulties to start), but had faster coverage expansion
Correlates of uptake and expansion

- Important regional differences
  - State dummy variables were significant for the majority of states located in the Northeast region

- Supply of health care services/providers and higher economic development favor coverage expansion

- The proportion of the population receiving *Bolsa Família* was positively associated with FHS coverage in 2004, but inversely associated with expansion
  - In 2004 poorer municipalities had already reached high level of coverage, but expanded slower (higher marginal benefits of implementation but difficulties to expand it)
# Uptake and expansion patterns

## Expansion of the FHS Coverage

<table>
<thead>
<tr>
<th>Uptake of the FHS</th>
<th>UNIVERSAL AND SUSTAINABLE (US)</th>
<th>UNIVERSAL BUT UNSTABLE (UU)</th>
<th>CONSTRAINED (CT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EARLY ADOPTERS (EA)</strong></td>
<td>Mayors quickly implement the FHS and expand consistently the coverage reaching universal level (N=749)</td>
<td>Mayors quickly implement the FHS, reach universal coverage, but the coverage trajectory is very unstable (N=915)</td>
<td>Mayors quickly implement the FHS but do not reach universal coverage (N=1,018)</td>
</tr>
<tr>
<td><strong>LAGGARDS (LG)</strong></td>
<td>Mayors delay the implementation of the FHS, but once started, coverage expands sustainably and reach universal level (N=1,073)</td>
<td>Mayors delay the implementation of the FHS, expand it in an unstable trajectory but reach universal coverage (N=524)</td>
<td>Mayors delay the implementation of the FHS, and do not reach universal coverage (N=1,228)</td>
</tr>
</tbody>
</table>
Uptake and expansion patterns
Policy Recommendation I

**Policy implementation must take into account different profiles of municipalities**

- Uptake and coverage expansion - not homogeneous
- Two distinct groups of municipalities:
  - Early adopters - mostly smaller in less developed areas; start with high level of coverage and expand faster
  - Laggards - mostly larger (do not reach universal coverage)
- Diseconomies of scale
  - Larger heterogeneity in healthcare in larger municipalities
Definition of financing mechanisms is fundamental for the program uptake and sustainability

1998: national FHS coverage < 5%
  - Increased by 60% from 1998 to 1999, and by 128% from 1998 to 2000

Sustainability over time may be a problem as municipalities are responsible for an important part of PHC expenditure
  - Instabilities and discontinuities
    - Small/poor municipalities
Policy Recommendation IV

Efforts to expand coverage need to focus on devising new policies that encompass both private and public sectors

- Private Health Insurance - disincentive to expansion
- Dual health system in Brazil - obstacle for public primary care and expansion of FHS
- Mayors, mainly in larger cities, choose not to implement FHS due to low demand
- Multiple primary care providers interrupts continuity of care and undermines coordination role of FHS
Three lessons

- The funding mechanism is critical for program implementation, and must be accompanied by ways to support the supply of primary care physicians in low density areas.

- In more developed and bigger areas the main challenge is lack of incentives to pursue universal coverage, especially due to the availability of private insurance.

- Population size is a crucial element to guarantee coverage sustainability over time.