SVSA

DEDT
CGCOVID

INTEGRATED SURVEILLANCE OF RESPIRATORY VIRUSES IN BRAZIL: PRACTICES AND CHALLENGES.

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CGCOVID/DEDT/SVSA

SUS

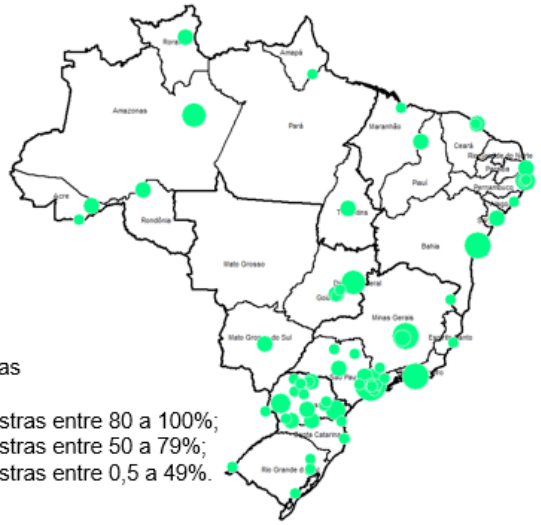
MINISTÉRIO DA SAÚDE

GOVERNO FEDERAL
BRASIL
UNIÃO E RECONSTRUÇÃO

ILI sentinel surveillance

2019: 153 sentinel units.

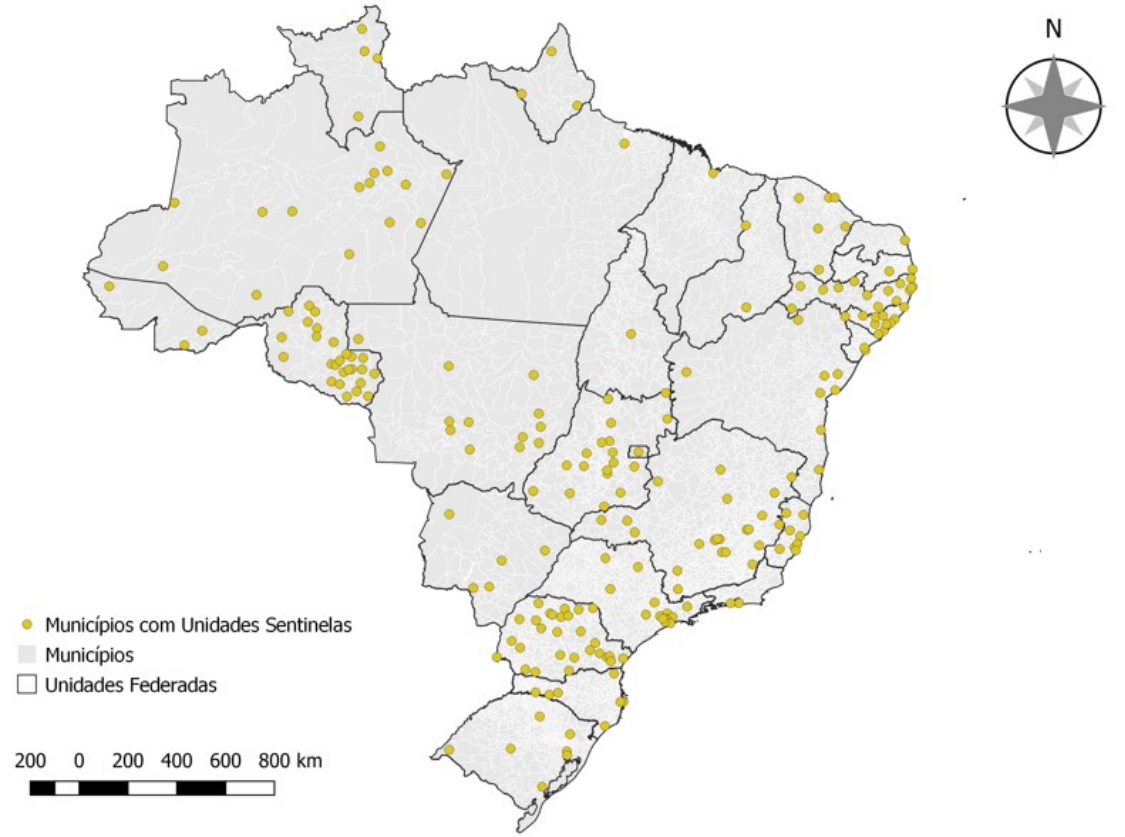
Distribuição de **Unidades Sentinelas (US) de Síndrome Gripal (SG)** no Brasil, cadastradas no sistema e com dados de coleta de amostras de SNF. **Brasil, 2019.**



- **153** Unidades Sentinelas (US) registradas no Brasil
  - **74,5%** (114/153) das US reportam dados de coleta de amostras
    - ✓ **61,4%** (70/114) US possuem indicador de coleta de amostras entre 80 a 100%;
    - ✓ **18,4%** (21/114) US possuem indicador de coleta de amostras entre 50 a 79%;
    - ✓ **20,2%** (23/114) US possuem indicador de coleta de amostras entre 0,5 a 49%.

Fonte: Sivep-Gripe. Dados atualizados em 14/11/2019, sujeitos a alteração.

2022: 342 sentinel units in 252 municipalities.



Source: SIVEP-Gripe.

ILI SENTINEL SURVEILLANCE: POTENTIALLY EXPOSED POPULATION

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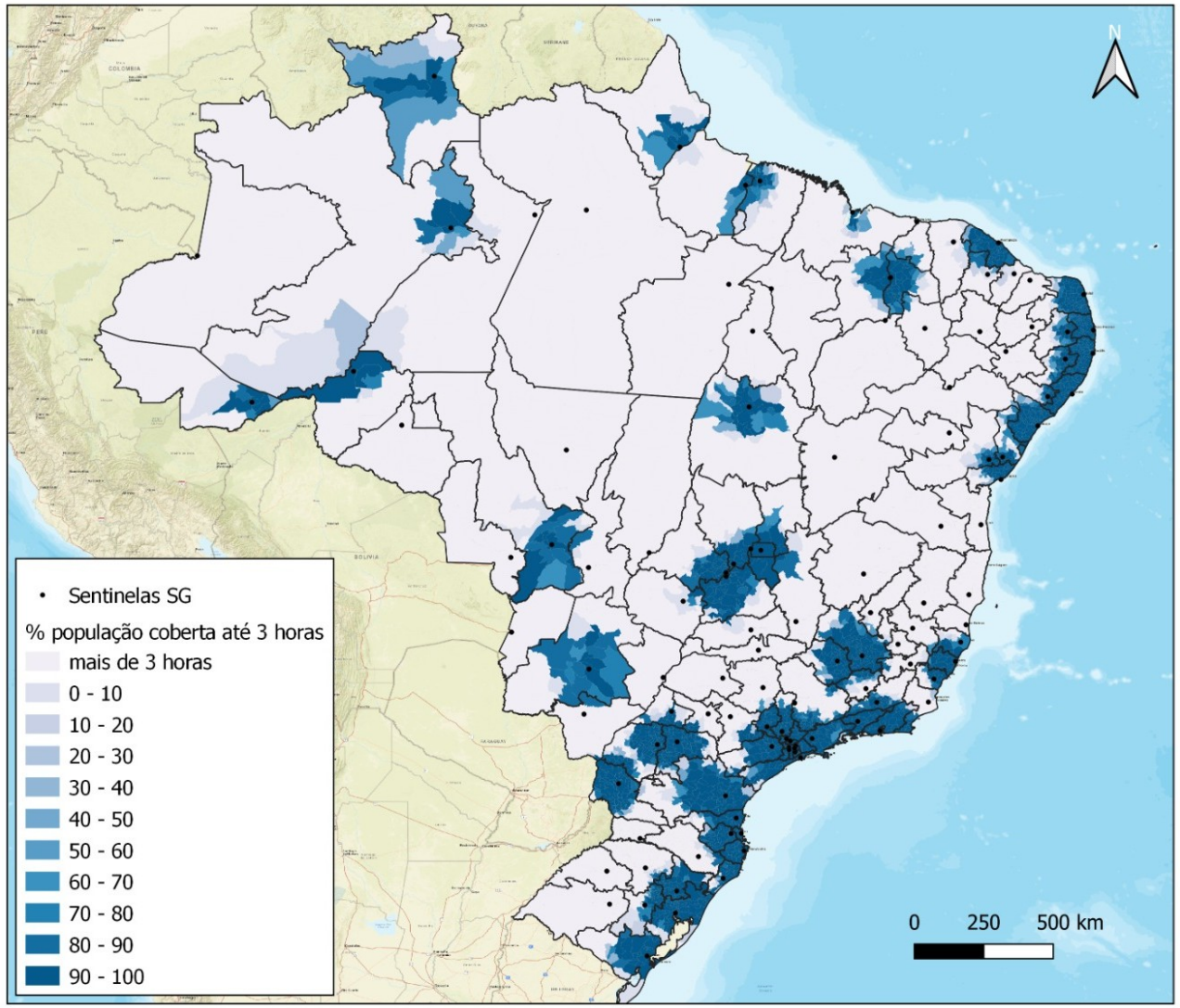
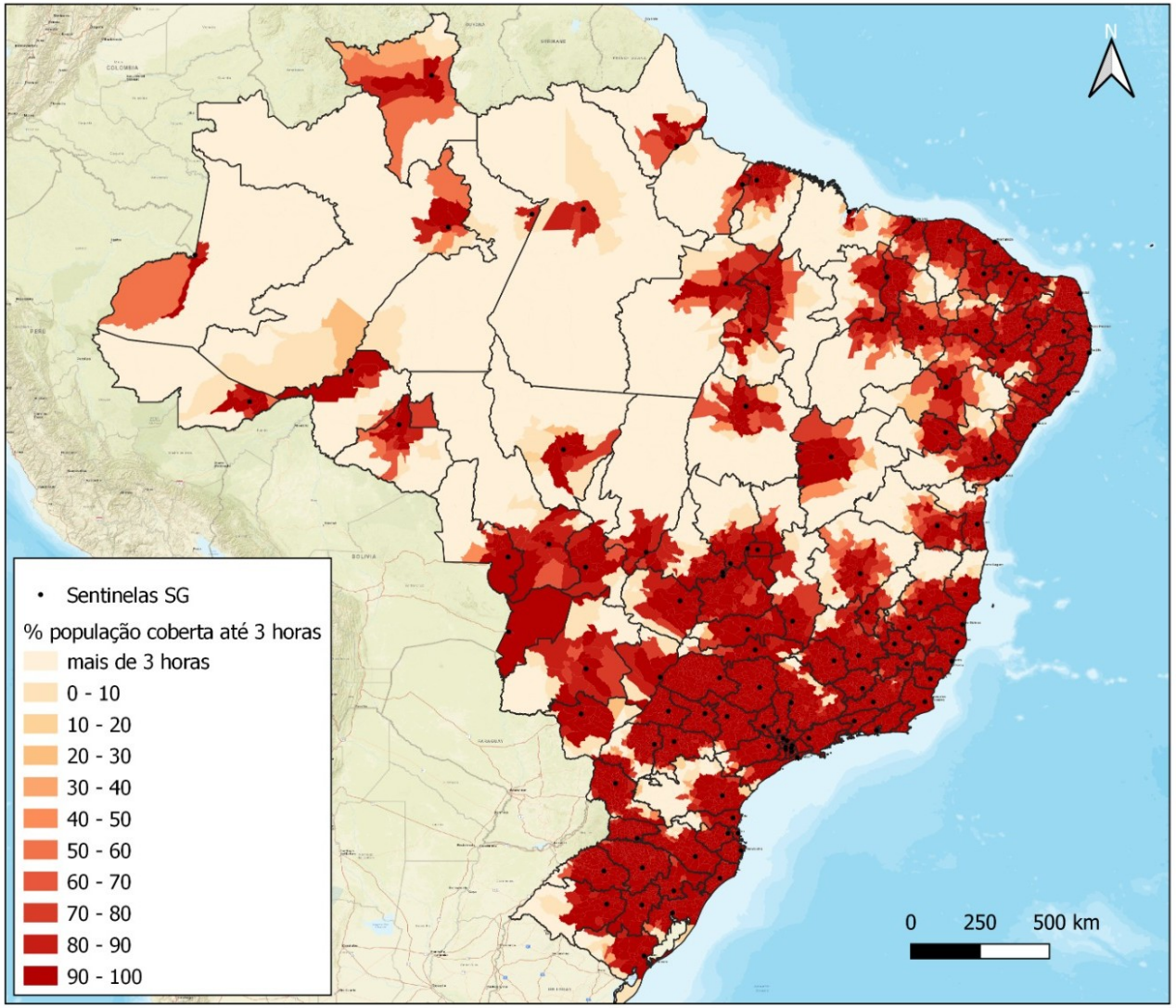
~63% of the pop.



~89% of the pop.



SARI surveillance

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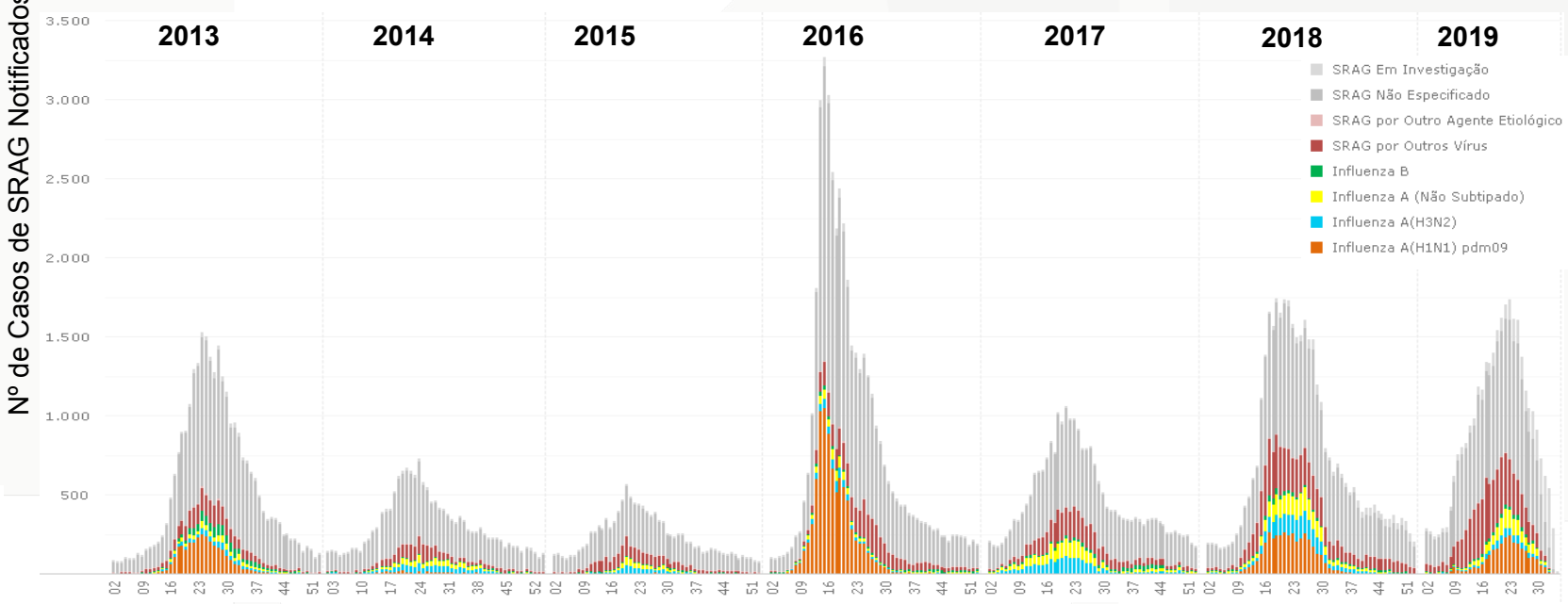
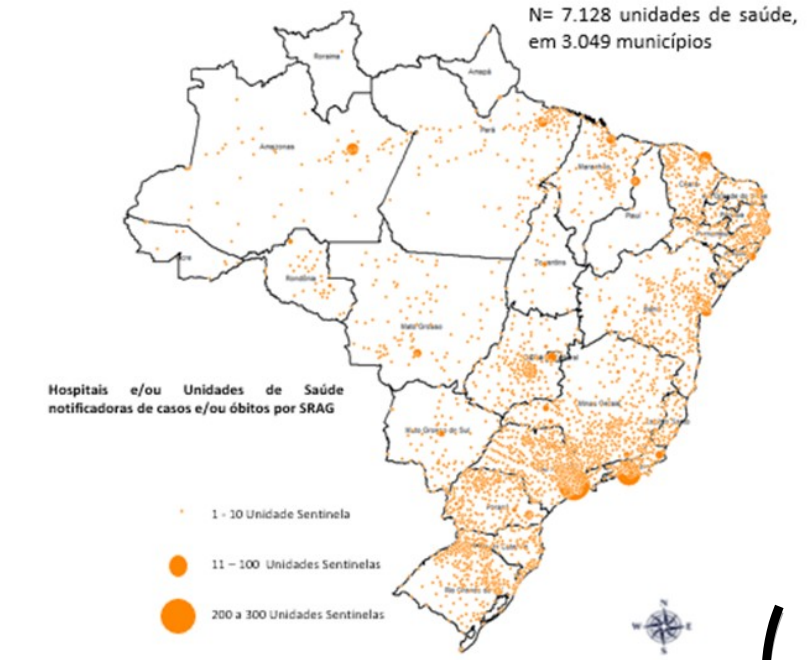
- Individual notification of every SARI case.
- Current lab protocol: real time RT-PCR tests.
  - Quadriplex: SARS-CoV-2, Flu A/B and metapneumovirus;
  - Multiplex: RSV, rhinovirus, adenovirus, ...
- TR-Ag is not recommended for SARI surveillance.

PS: both SARI and ILI surveillance feed the genomic surveillance of Influenza, by sub-sampling per state and epiweek. For SARS-CoV-2 genomic surveillance, the universal surveillance of covid-19 is also a possible source for samples.

SARI by pathogen, 2013-2019

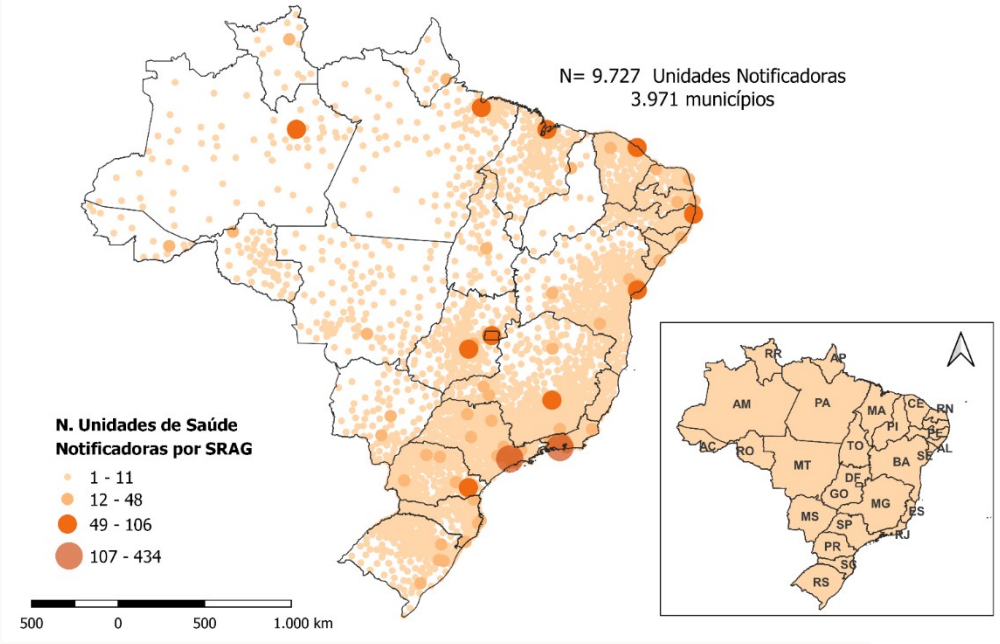


Source: Sivep-gripe. Acessed on 2019-08-21.

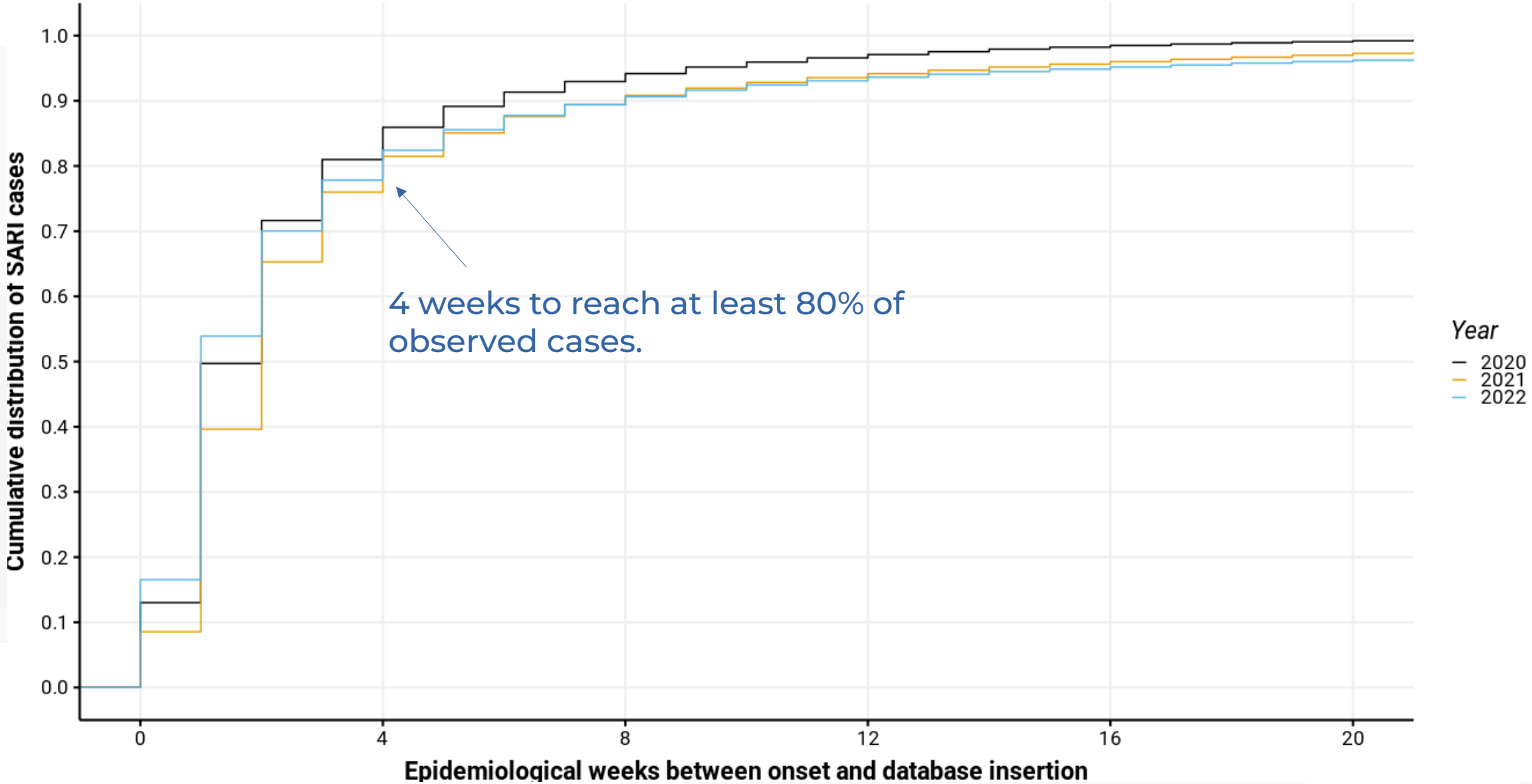


FONTE: Sistema de Informação da Vigilância Epidemiológica da Gripe (SIVEP-Gripe), atualizado em 13/07/2020. Dados sujeitos à alteração.

Unidades de Saúde notificadoras de casos e/ou óbitos por SRAG, segundo municípios entre 2013 a 2022



SARI: database insertion delay



SARI NOWCASTING BY AGE, AND LAB RESULTS BY AGE

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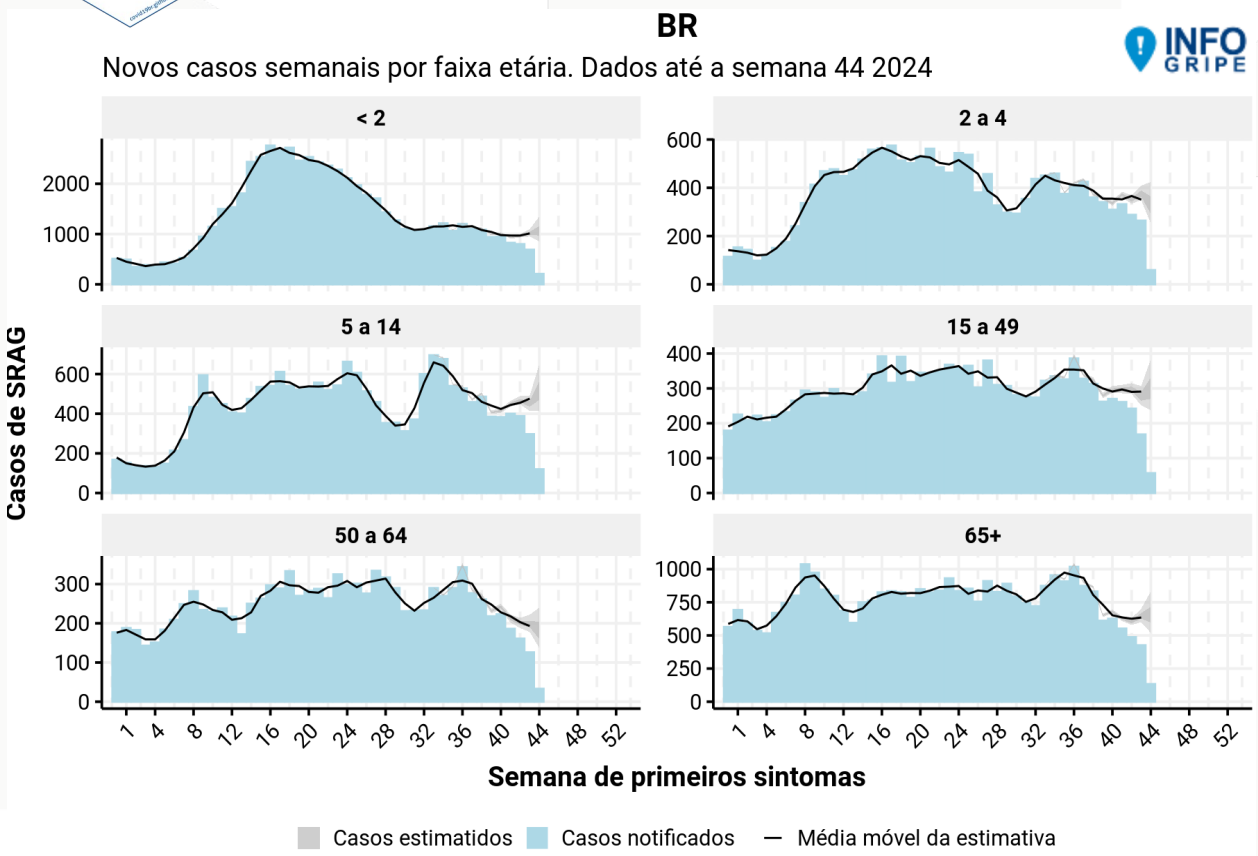
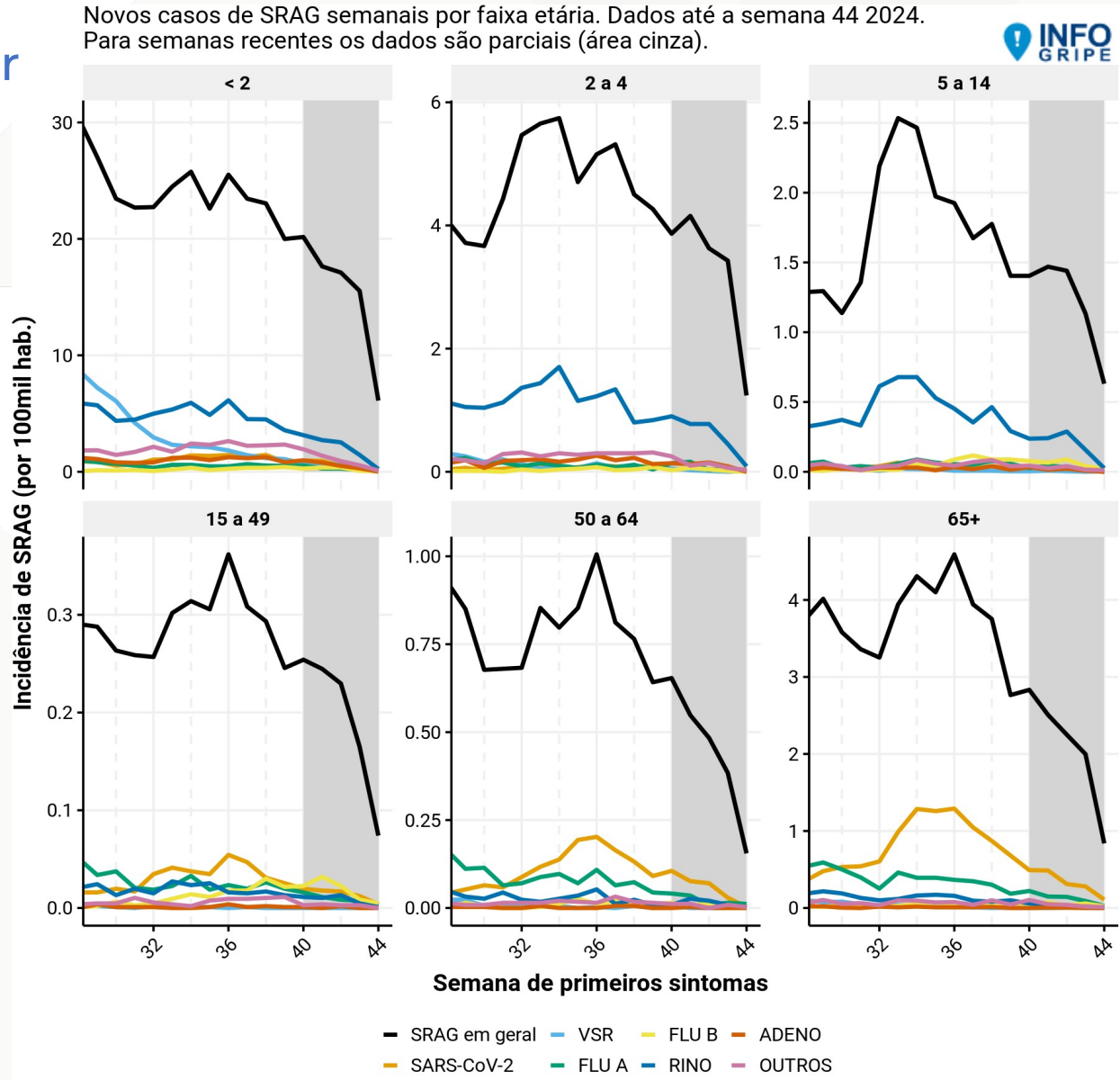
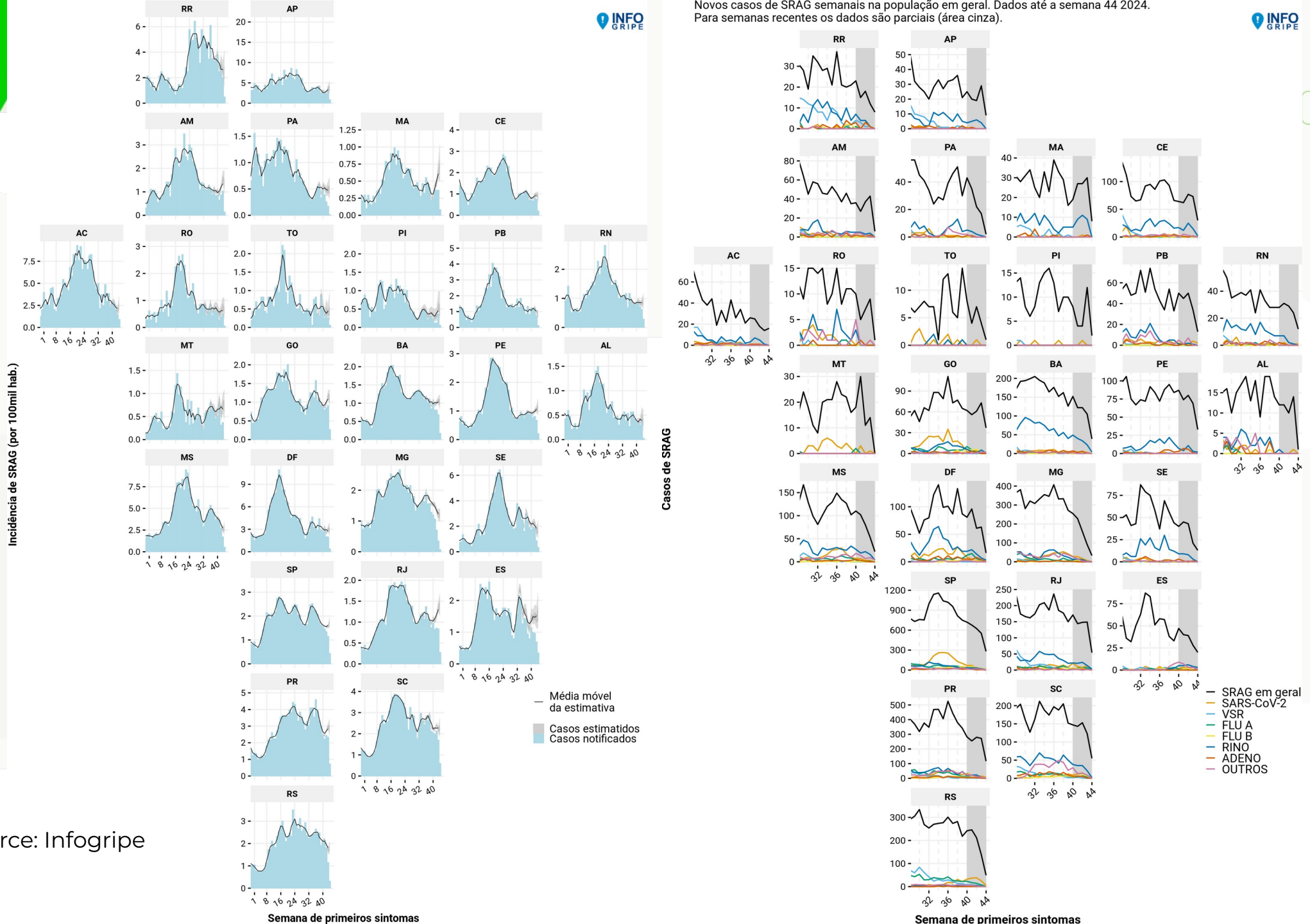
https://github.com/covid19br/nowcaster





* dados preliminares

Fonte: SIVEP-Gripe, atualizado em 29/9/2024, dados sujeitos a alteração.



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Source: Infogripe

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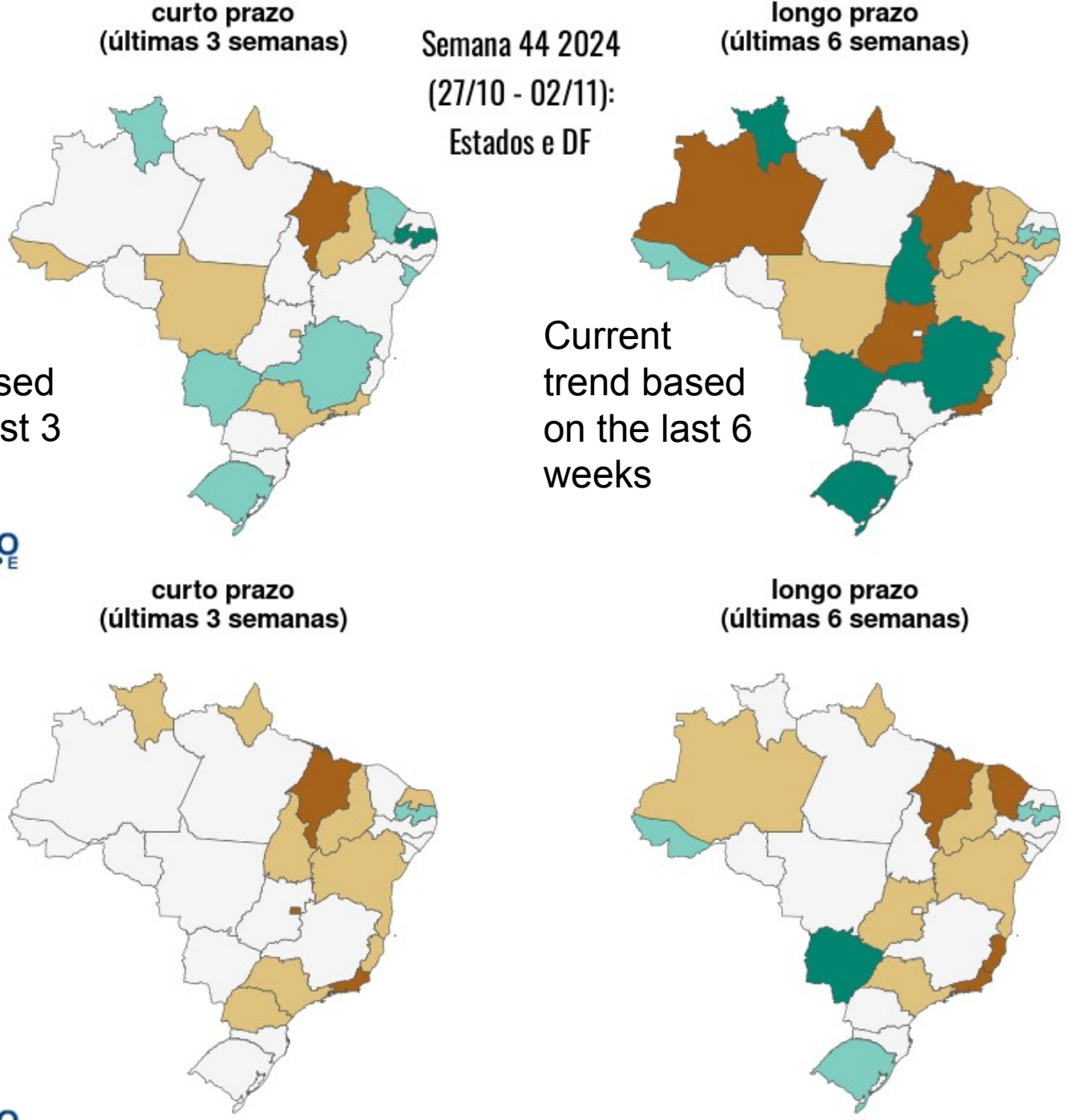
Likely increasing

Likely decreasing

Current trend based on the last 3 weeks

Current trend based on the last 6 weeks



Source: Infogripe

PITFALLS OF ACCUMULATED COUNTS BASED ON REPORTING DATE

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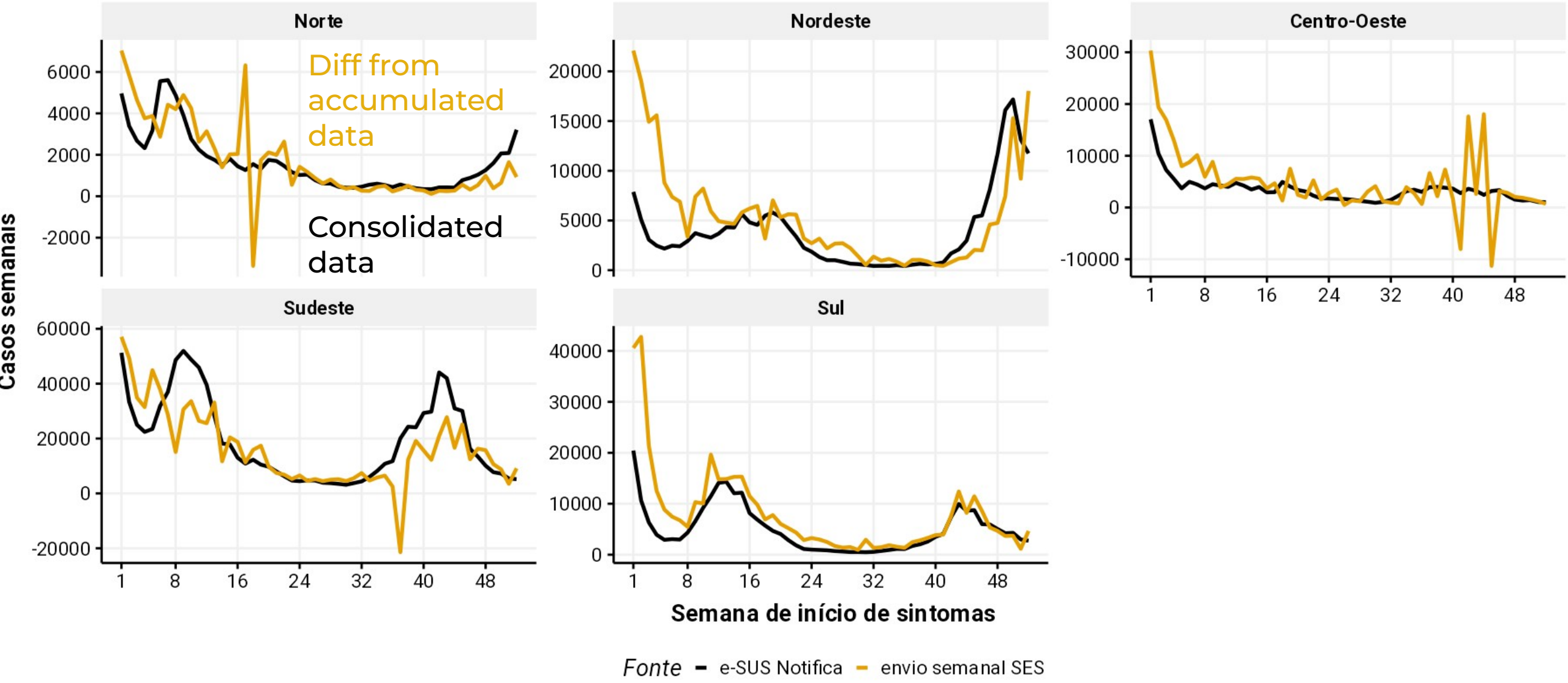
Total at week T = (Total at week T-1)

+ (new events occurred and reported at week T)

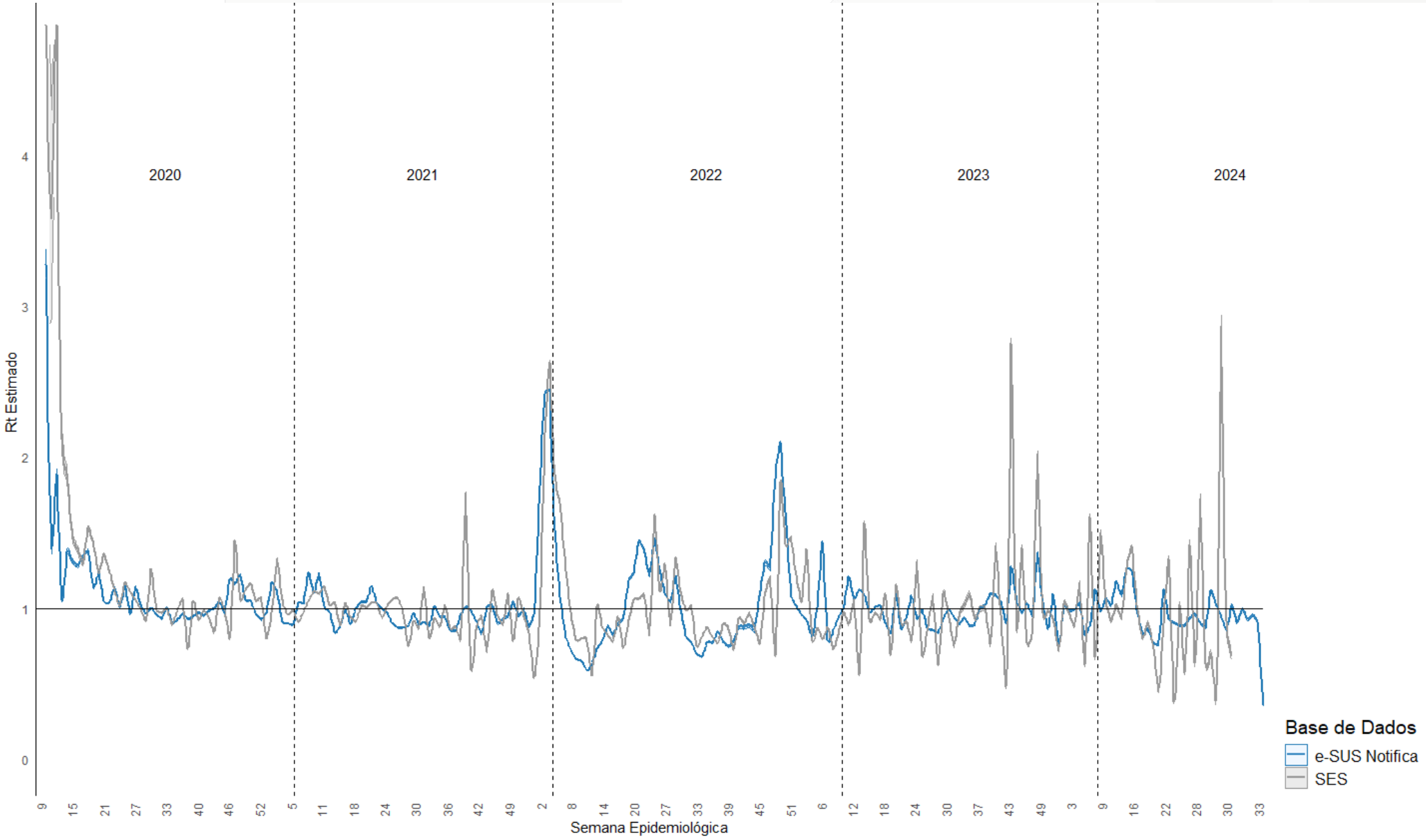
+ (old events reported at week T)

- (data clenaup: duplicity, discarded cases, ...)

WEEKLY COUNTS, BY REGION



IMPACT ON Rt ESTIMATES



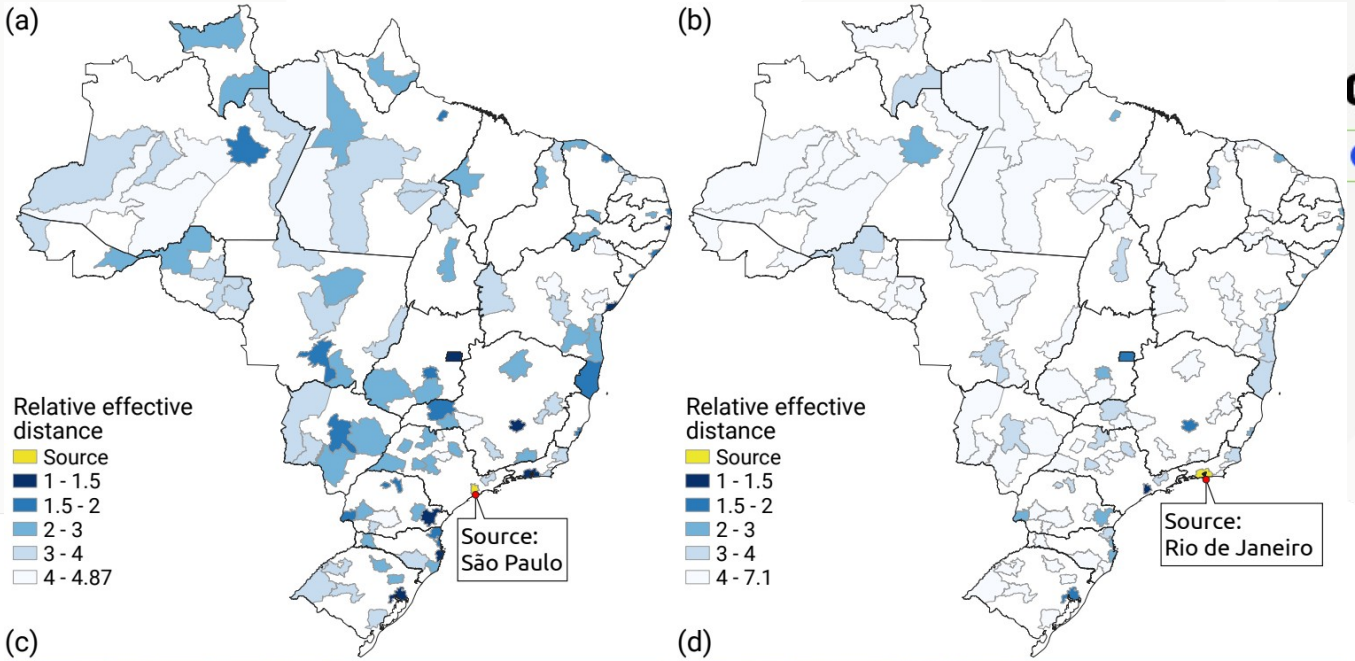
INVASION PATTERNS AND INTERVENTION SCENARIOS

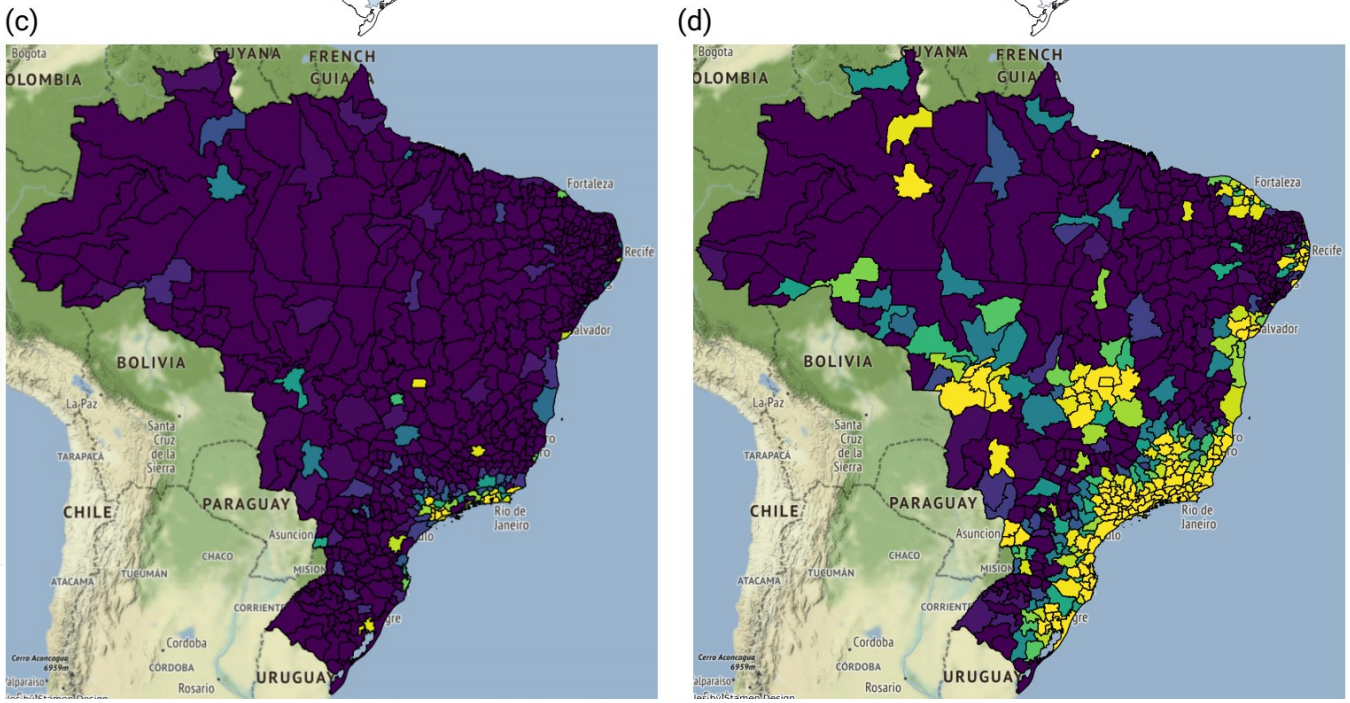
Exposure

Estimates published on March 23 and 25, 2020.
http://bit.ly/mave-covid19-relatorio2

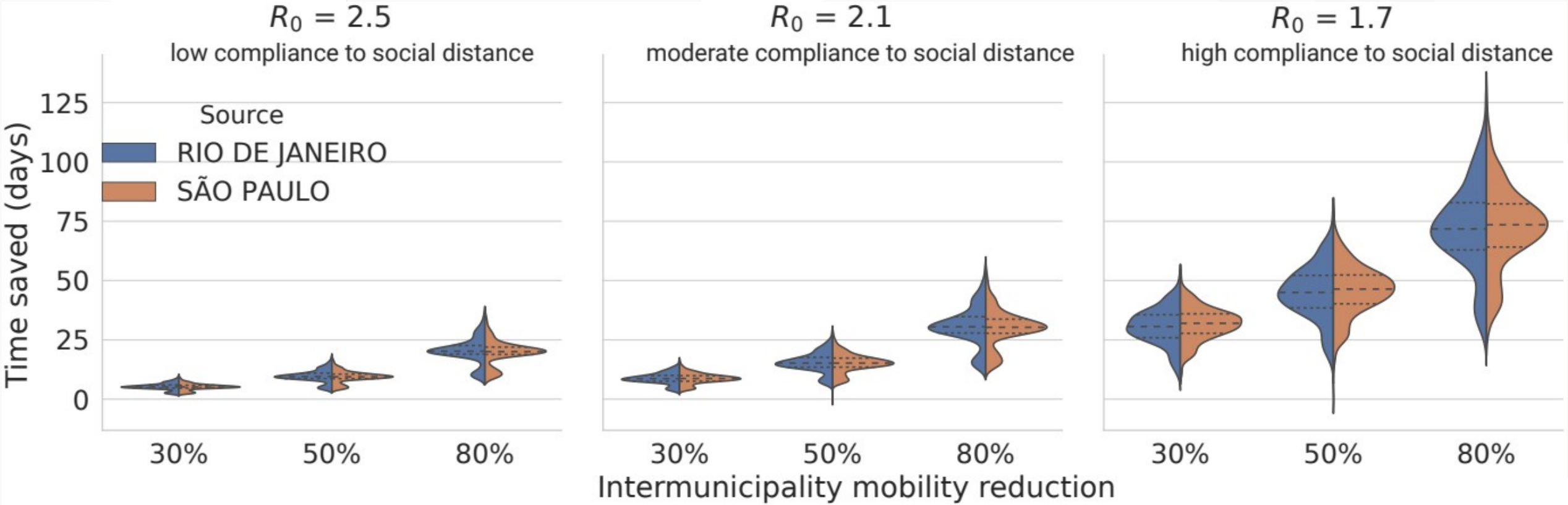
Medrxiv:
https://doi.org/10.1101/2020.03.19.20039131

PloS:
Coelho et al. (2020) Assessing the spread of COVID-19 in Brazil: Mobility, morbidity and social vulnerability. PLOS ONE 15(9): e0238214. https://doi.org/10.1371/journal.pone.0238214





Mitigation scenarios: time to invasion



Estimates published on March 23 and 25, 2020.
http://bit.ly/mave-covid19-relatorio2
Medrxiv: https://doi.org/10.1101/2020.03.19.20039131

$$T_{i,j} = \frac{d_{ij}}{\gamma(R_0 - 1)}$$

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SISS-Geo Platform

Information System on Wildlife Health

Participatory monitoring of wildlife and human health in Brazil

10 ANOS SISS-Geo

What does it offer

Open access
Managers acess

Animal data	Alive, Dead, Sick animals Type of animal/Species validation by specialists Physical conditions
Map with georeferenced location records	Google maps Geographical coordinates and precision
Details of the observation site	Environmental impacts, human presence, conservation units, developments, agriculture, livestock
Contributor information	Professional or leisure use, age, gender, contact
Contact us	Tool for information, criticism and suggestions
Outcome	Real-time alerts to national, state and municipal managers, indication of suspicion, result and type of diagnosis, analysis of similarity of records, traceability, export of data

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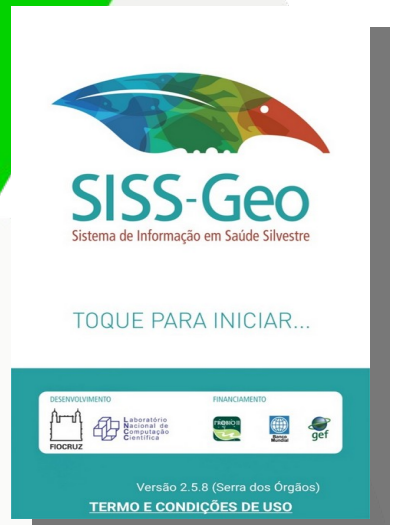
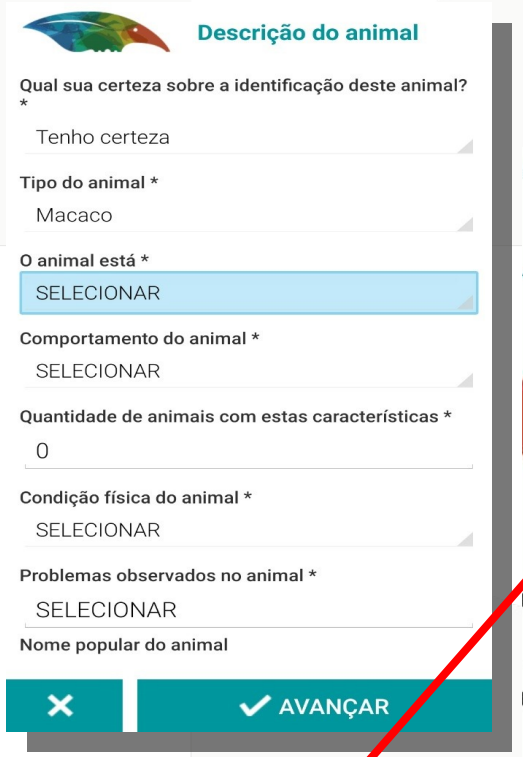
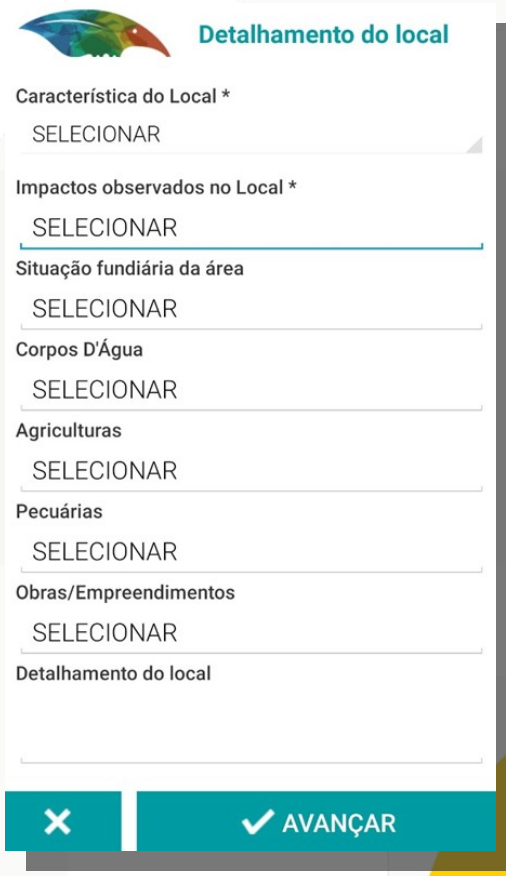


ANIMAL INFORMATION



OFF LINE GEOREFERENCING

ENVIRONMENTAL IMPACTS



Increase geographic accuracy

Surveillance of outbreaks in animals and information pathways in SISS-Geo

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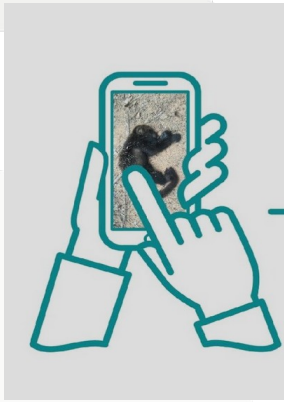
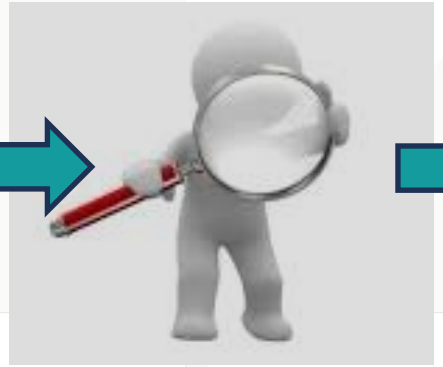


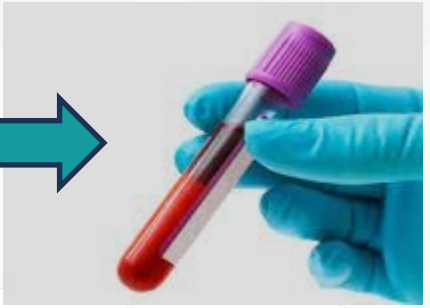
SISS-Geo Records

Real-time Alerts



Field investigation

Outbreak notification



Biological Sample Collection

Laboratory diagnosis

SOROLÓGICO

NOME DO EXAME	METODOLOGIA	ETAPA	CÓDIGO DB
HIV 1 – NEONATAL	ELISA	T1	HIVN
HIV 1 E 2 – ANTICORPOS (CLIA E ECLIA) ≥ 40	CLIA E ECLIA	T1	HIV2
HIV 1 E 2 – ANTICORPOS (CLIA) ≥ 40	CLIA	T1	HIV
HIV 1 E 2 – ANTICORPOS (ECLIA) ≥ 40	ECLIA	T1	HIV1
HIV WESTERN BLOT	WB	T3	HIVWB

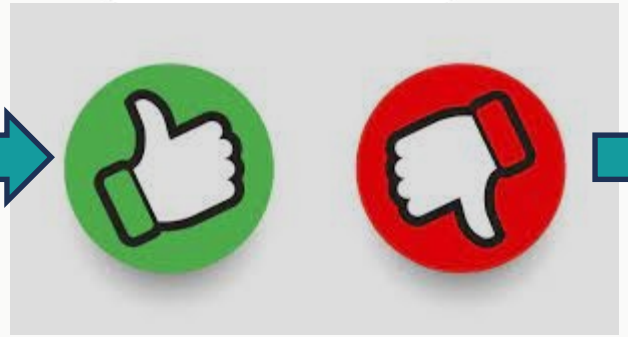
MOLECULAR

NOME DO EXAME	METODOLOGIA	ETAPA	CÓDIGO DB
HIV – QUALITATIVO (DETECÇÃO POR PCR)	PCR	T2	HIVPC
HIV – QUANTIFICAÇÃO POR PCR (CARGA VIRAL)	TEMPO REAL	T2	HIVQT
HIV – GENOTIPAGEM DE RESISTÊNCIA	SEQUENCIAMENTO		HIVGE

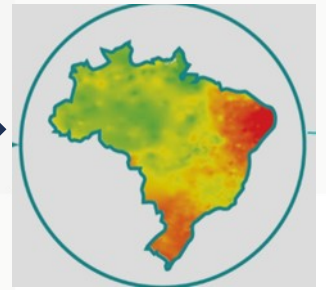
IMUNOFENOTIPAGEM

NOME DO EXAME	METODOLOGIA	CÓDIGO DB
LINFÓCITOS T HELPER	CITOMETRIA DE FLUXO	CD4
SUBPOPULAÇÃO LINFOCITÁRIA CD3–CD4–CD8	CITOMETRIA DE FLUXO	CD483

Laboratory results



Upshot



Predictive models

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Thank you!

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