Zika virus infection among pregnant women in Central Brazil - Preliminary Report

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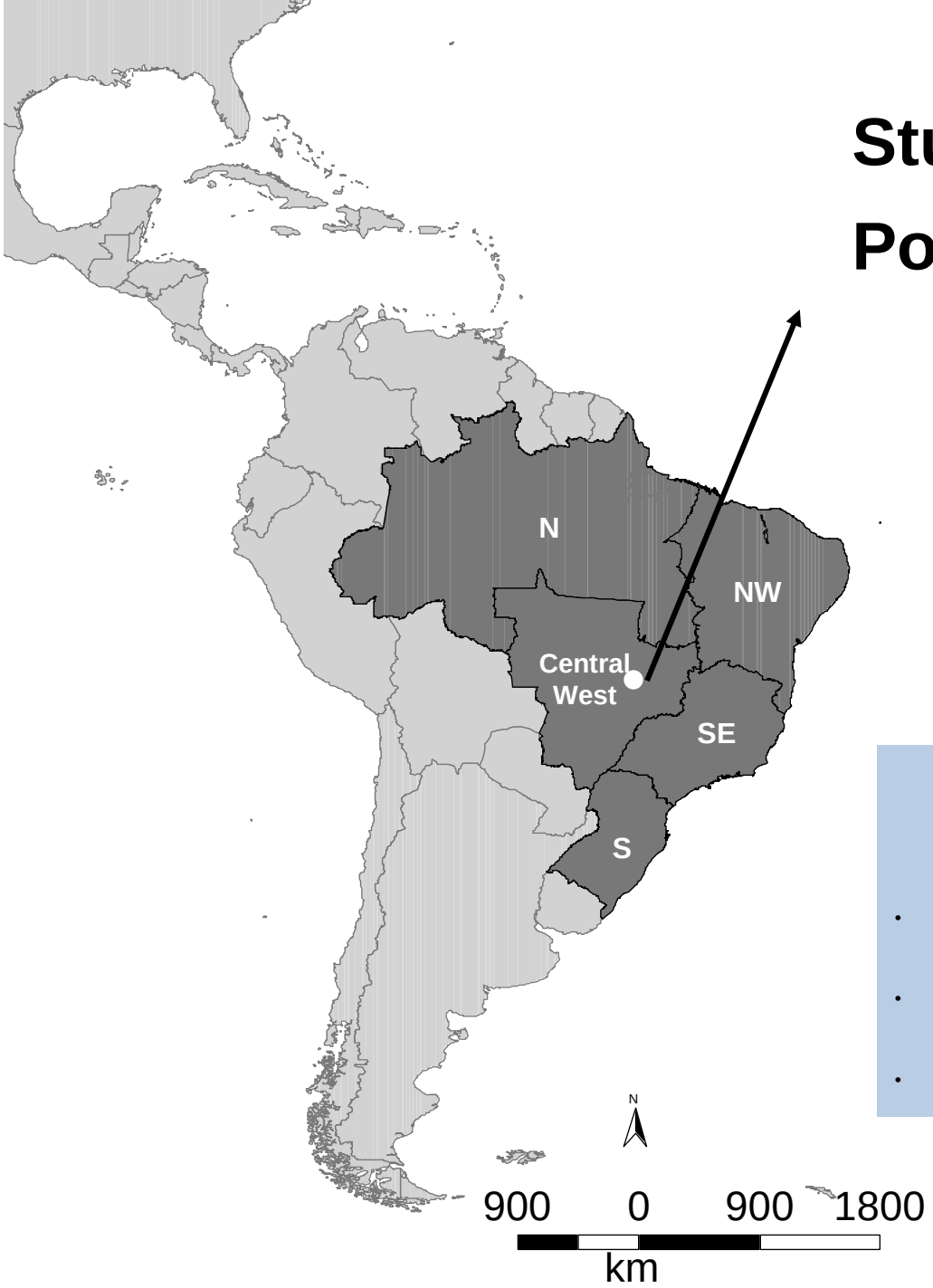
Disclosure

I have no financial or other conflict of interest to report.



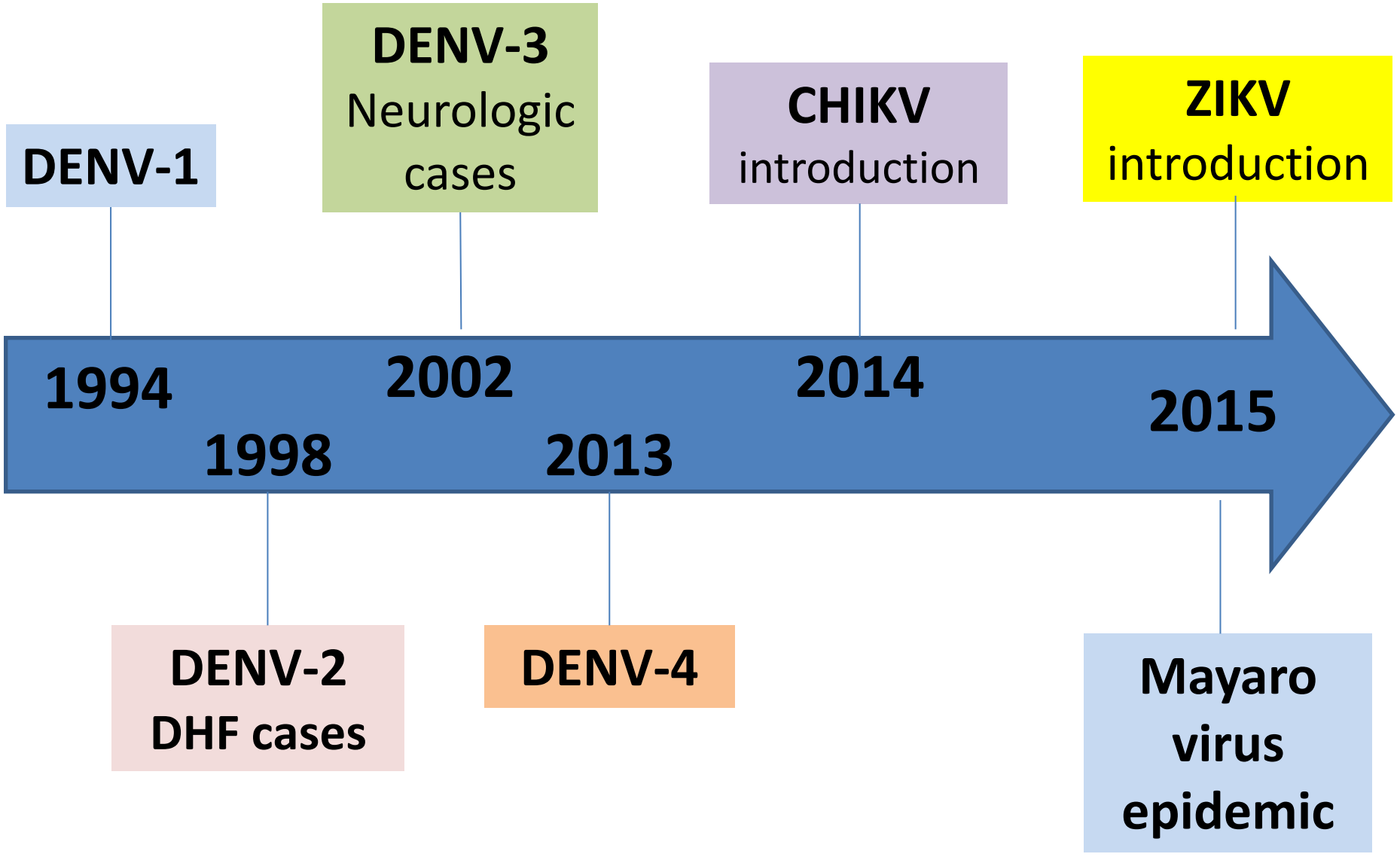
Study area: Goias state

Pop: 6.610.681 inhabitants
(IBGE, 2015)

Epidemiological scenario

- Yellow Fever endemic area
- > 90% vaccine coverage
- Dengue hyperendemicity

Arbovirus in Goias State, Brazil



Under Zika virus Public Health Emergency

Brazilian Ministry of Health

Jan-Sept, 2016: ~200 thousand registered

incidence rate: 98.1 cases/100,000 inhabs

Since Feb, 2016 in Brazil: compulsory notification of pregnant with rash (SINAN)

Figura gestante

Objective

To assess the frequency of ZIKV infection among pregnant women with rash, in Goias state, Central Brazil

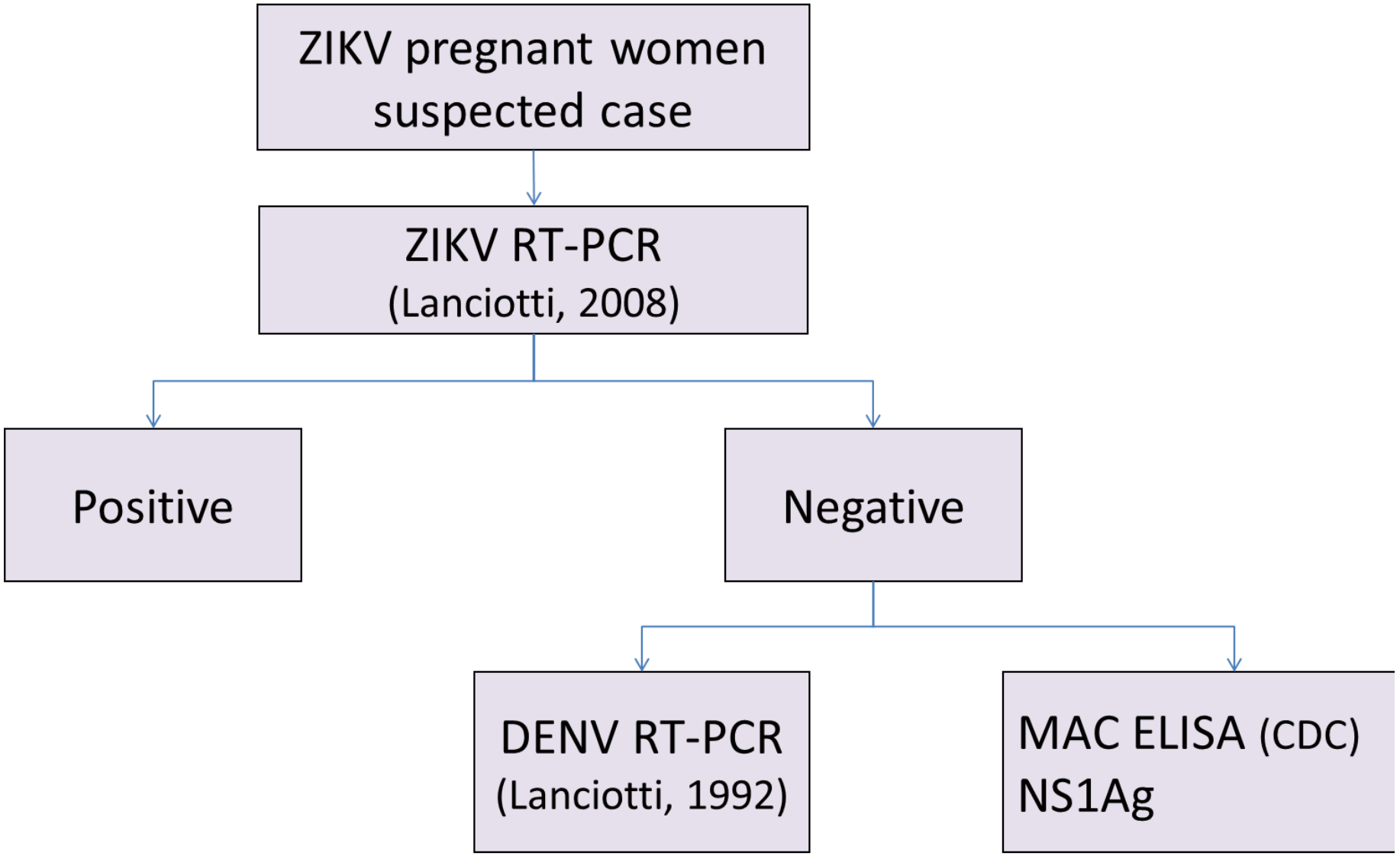
Study population:

- Notified pregnant women with rash, suspected of ZIKV infection
- Resident in Goias state, Central Brazil
- Blood and/or urine sample collected for ZIKV detection

Period: March to October, 2016

Ethical issues: this investigation is part of routine care and laboratory surveillance, and ethical approval was not required.

Laboratory tests



Results

Profile of the study population

Variable	Pregnant women n=328
Age, years	
Median (IQR)	27 (22 – 32)
Sample, days	
Mean(IQR)	3.2 (2 – 4)
Gestational age	
First trimester	104 (32%)
Second trimester	132 (40%)
Third trimester	90 (27%)

Laboratory confirmed ZIKV infection

Variable	Pregnant women n=325
RT-PCR detectable	192 (59%) 95% CI: 54%-64%
Gestational age	
First trimester	49 (25%)
Second trimester	88 (46%)
Third trimester	54 (28%)

Results

Sample	ZIKV RT-PCR		CI 95%
	Positive/Tested	Positivity	
Serum	171/292	58.7%	52.8 - 64.1
Urine	102/226	45.1%	38.7 - 52.7

Agreement of 78%: 192 paired samples (serum and urine)

Dengue results: molecular biology and serology

Among 133 RT-PCR ZIKV negative

25% (34/133) **Positive for Dengue** infection:

- 21 RT-PCR detectable
- 4 NS1Ag positive
- 9 IgM positive

Conclusion

- ✓ High incidence of confirmed ZIKV infection among notified symptomatic pregnant women, in Central Brazil, in the first wave of ZIKV epidemic
- ✓ High frequency of DENV infection among pregnant women

Considerations

- ✓ Pregnant women suspected of ZIKV infection and their offsprings are followed according to the Brazilian National guidelines
- ✓ The laboratory results are available online for health providers
- ✓ CHIKV screening started in 2016 at Public Health Laboratory in Central Brazil

Acknowledgments

Lacen Team

Virology section

Molecular biology section

SUVISA

SES-GO

UFG Team

Valeria Féres

Marília Dalva Turchi

FIOCRUZ

Celina M Turchi Martelli

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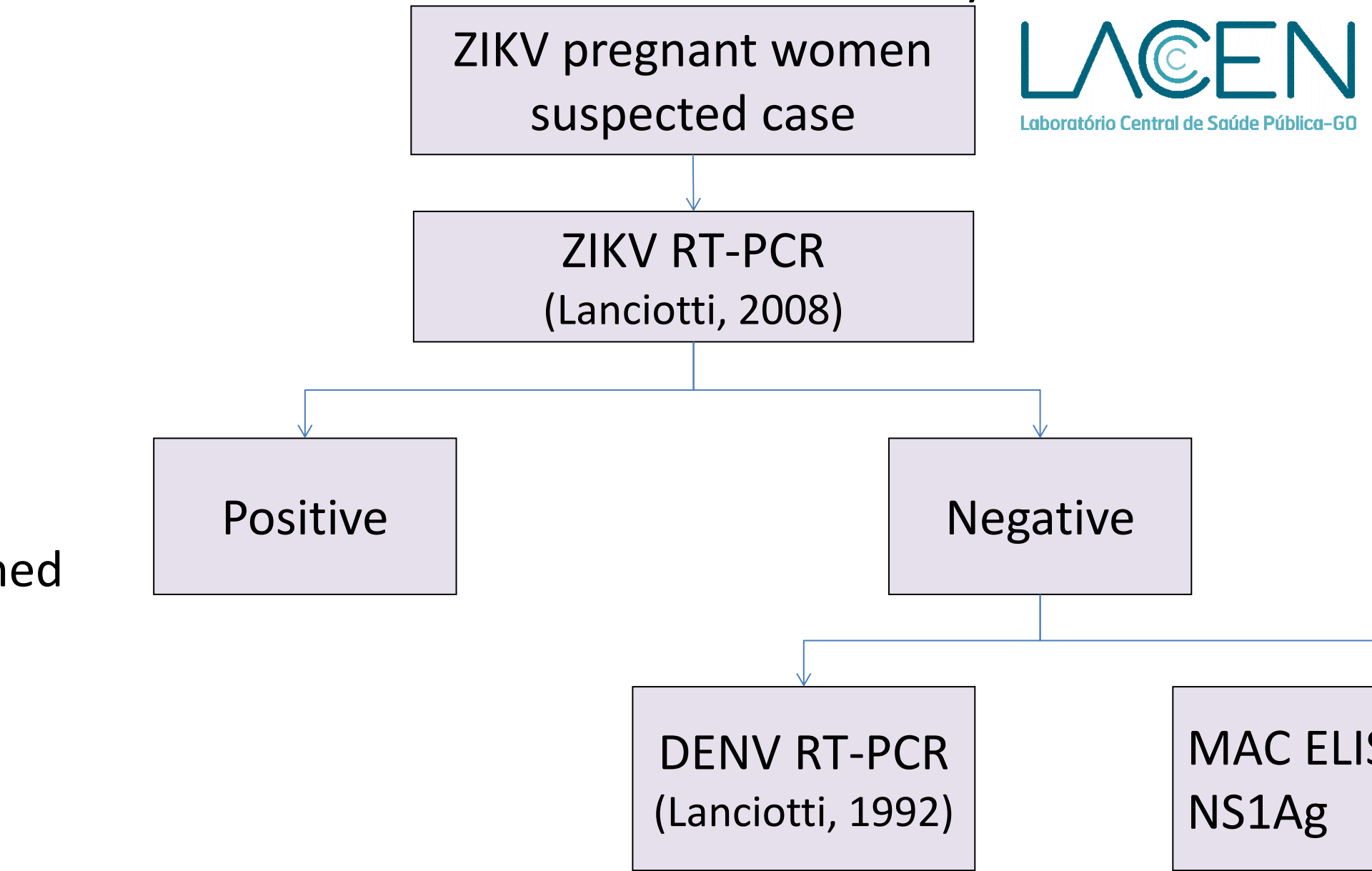
Laboratory tests

Held at: Reference Public Health Laboratory of Goias state



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ZIKAV RT-PCR results

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Arbovirus spread

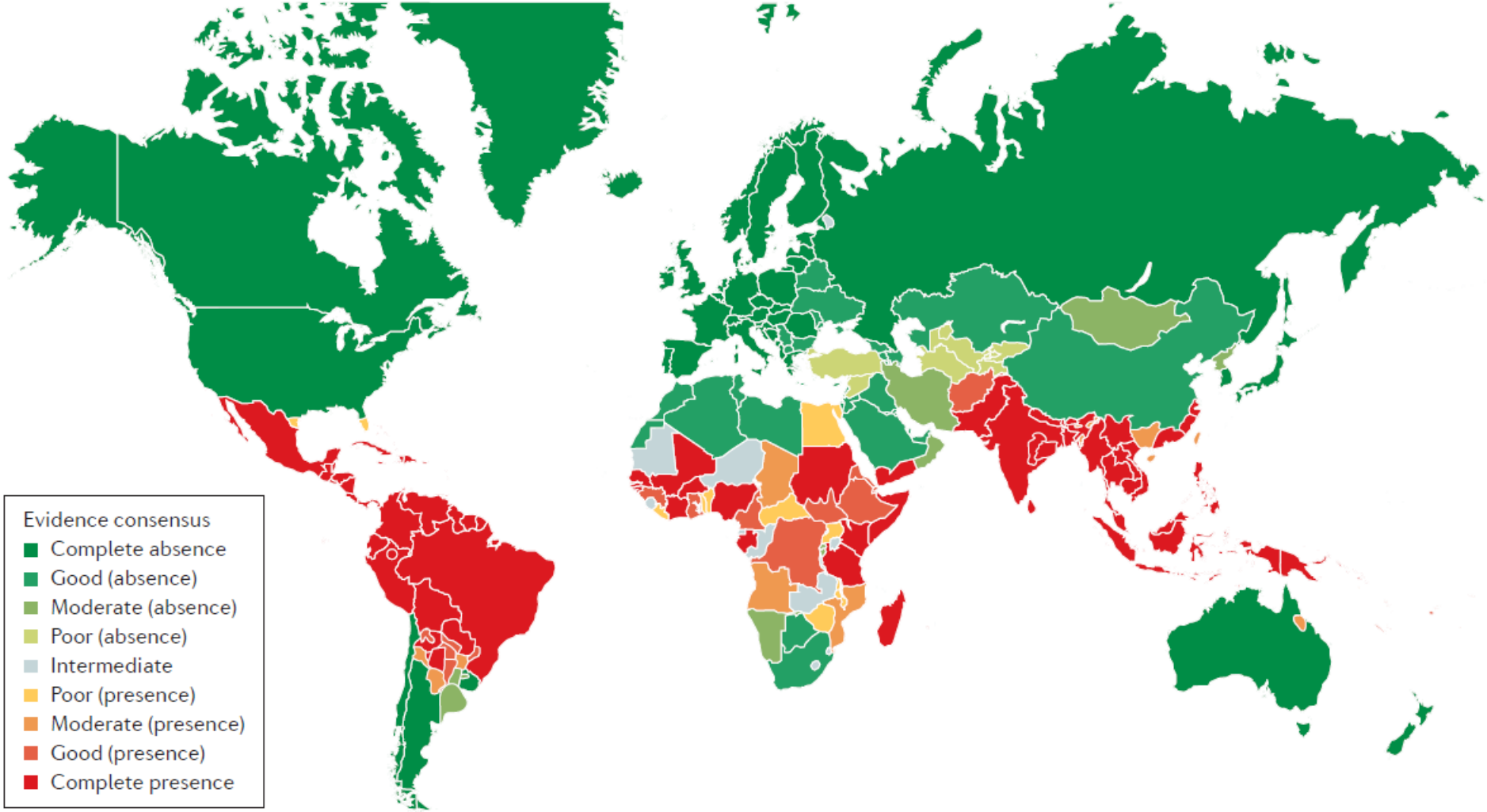

Figure 3 | **The suitability of different regions for dengue virus transmission.** The global evidence consensus, risk and burden of dengue is shown with evidence consensus on complete absence (dark green) through to complete presence (dark red) of dengue. Adapted from REF. 10, Nature Publishing Group.

Guzman MG et al. (2016). Dengue infection. Nat Rev Dis Primers

Arbovirus in Goias State, Brazil

Year	Study area
1994	**DENV-1** introduction
2013	Co-circulation **DENV-1 to 4**
2014	**CHIKV** introduction
2015	**Mayaro Virus** outbreak
2015	ZIKV introduction outbreak