

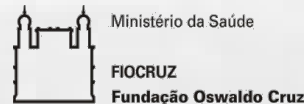
COVID-19 and stroke:

What are the pressing challenges?

How we are facing it in Brazil

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Brazilian studies

- Silva MT et al.
 - The impact of the COVID-19 pandemic on a stroke center in Latin America
 - Comparison of stroke incidence from March to May 2019 to 2020
- Nascimento OJM
 - Neurological complications associated with SARS-CoV-2 (COVID-19) in Brazil: Organization of the NEUROCOVID-RIO group and preliminary findings

Brazilian projects

- Brasília University Hospital – Brasília University
 - Glehn F.
 - Acute neurological manifestations associated to SARS-COV-2 vírus
- Tropical Medicine Institute –São Paulo University, Emílio Ribas Infectology Institute, Albert Einstein Israeli Hospital, Fortaleza General Hospital

Continuous challenges during SARS-COV-2 pandemic

- Proposal of case-control multicentric research on association of SARS-COV-2 with occurrence, prognostic and pathogenesis of cerebrovascular diseases and other neurological manifestations
- Motivation of professionals to cooperate to this proposal
- Specific training of professionals for the proposal
- Implementation of protect code

Continuous challenges during SARS-COV-2 pandemic

- Second proposal of case-control multicentric research on immunological and viral dynamics in Restauração Hospital
 - A model for mimicry blood brain barrier
 - Development of a test to determine SARS-COV-2 viral load
- Third proposal of research
 - COVID-19 Neurological Disease: a prospective study in Brazil, India and Malawi

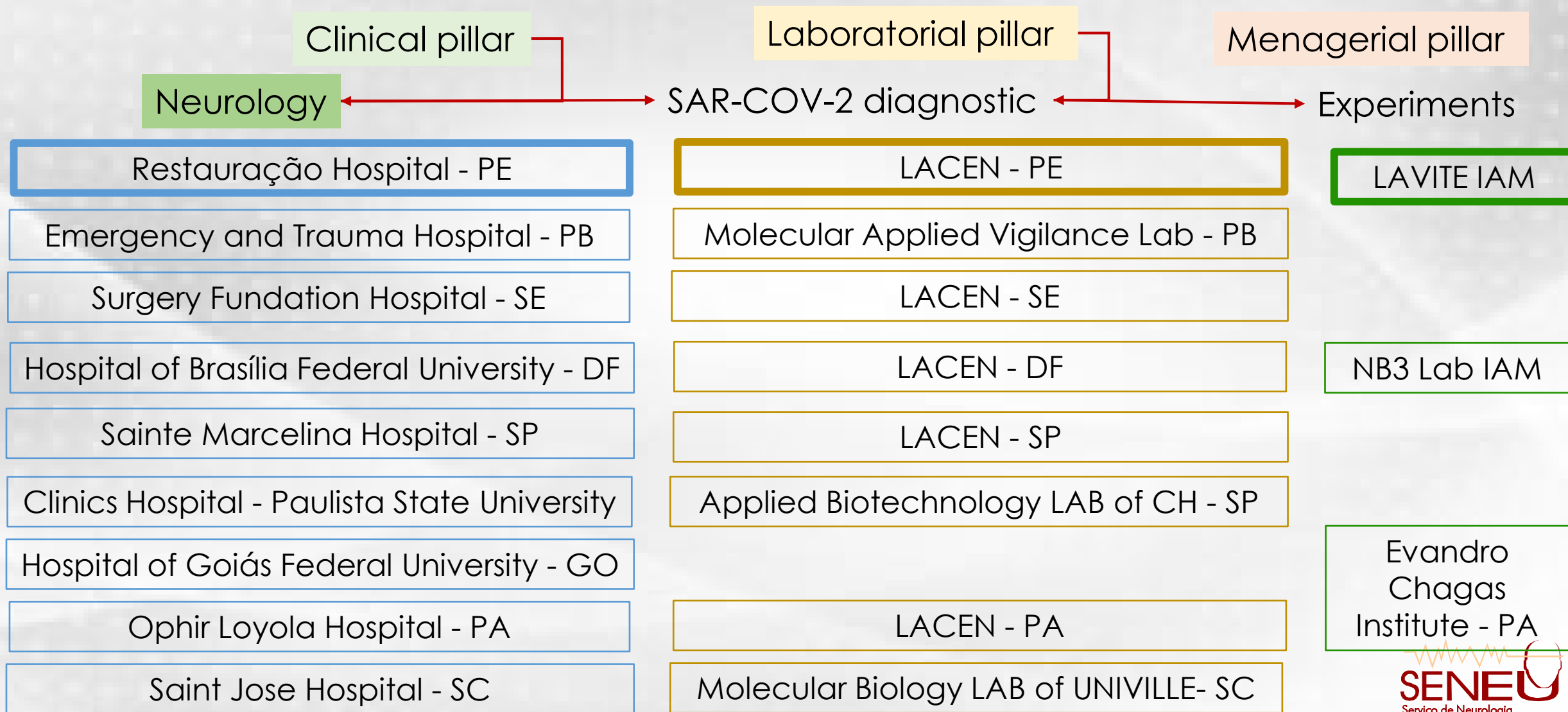
Restauração Hospital – a public hospital

□ Characteristic

- State Reference for neurological and cerebrovascular diseases

Data from August to October	Clinical emergence	Neurological disorders	Percent of neurological disorders	Percent of stroke cases
2019 (patients)	7,029	4,410	62.7	17.0
2020 (patients)	7,340	4,709	64.2	19.1

Competence diagram of Multicentric Research



Instruments for data collection

- General data
- COVID data
- Laboratorial exams
- Radiological exams
- Neurological examination and classification
- Scales
 - RANKIN
 - NIHSS
- Stroke Code



WHO COVID-19 case definitions

- **Confirmed** - A person with
 - laboratory confirmation of SARS-CoV-2 infection, irrespective of clinical signs and symptoms;
 - confirmatory tests - a nucleic acid amplification test or a validated antibody test;
 - presence in an area with established circulation of virus - one positive RT-PCR test **or** identification of virus on sequencing (one or more negative tests do not rule out infection if there is clinical suspicion);
 - presence in an area without established circulation of virus, there should be one positive RT-PCR test for two different viral genome targets **or** one positive result with partial or whole genome sequencing

WHO COVID-19 case definitions

- Probable - A suspect case for whom testing for the COVID-19 virus
 - is inconclusive
 - could not be done for any reason
- Suspected - A patient with acute respiratory illness (fever and at least one sign or symptom of respiratory distress) associated to:
 - history of travel to or residence in a location reporting community transmission of COVID-19 disease during the 14 days before onset
 - contact with a confirmed or probable case in the last 14 days before symptom onset;
 - requirement of hospitalisation, in the absence of an alternative explanation that fully explains the clinical presentation

WHO . World Health Organization; Geneva: 2020. Coronavirus disease 2019 (COVID-19): situation report, 61

SARS-CoV-2 meningitis, encephalitis, myelitis, or CNS vasculitis

- *Confirmed*

- SARS-CoV-2 detected in CSF or brain tissue **or** evidence of SARS-CoV-2-specific intrathecal antibody **and** no other explanatory pathogen or cause found

- *Probable*

- SARS-CoV-2 detected in respiratory **or** other non-CNS sample, **or** evidence of SARS-CoV-2-specific antibody in serum indicating acute infection **and** no other explanatory pathogen or cause found

Ellul MA et al. *Lancet Neurol.* 2020 Sep; 19(9): 767–783.

SARS-CoV-2 meningitis, encephalitis, myelitis, or CNS vasculitis

- *Possible*

- A suspected case definition of COVID-19 according to national or WHO guidance on the basis of clinical symptoms and epidemiological risk factors, in the context of known community SARS-CoV-2 transmission.
- Supportive features include
 - new onset of at least one: cough, fever, muscle aches, loss of smell, or loss of taste
 - lymphopenia or raised D-dimer level; **and**
 - radiological evidence of abnormalities consistent with infection or inflammation (eg, ground glass changes)

Acute disseminated encephalomyelitis Guillain-Barré syndrome, and other acute neuropathies associated with SARS-CoV-2 infection

- *Probable association*

- Neurological disease onset within 6 weeks of acute infection;
- either SARS-CoV-2 RNA detected in any sample or antibody evidence of acute SARS-CoV-2 infection
- no evidence of other commonly associated causes

- *Possible association*

- Neurological disease onset within 6 weeks of acute infection
- either SARS-CoV-2 RNA detected in any sample or antibody evidence of acute SARS-CoV-2 infection
- evidence of other commonly associated causes

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Stroke associated with SARS-CoV-2 infection

- *Probable association*

- SARS-CoV-2 detected in CSF or other sample, **or** evidence of SARS-CoV-2-specific antibody in serum indicating acute infection **and**
- no other known traditional cardiovascular risk factors

- *Possible association*

- Either SARS-CoV-2 detected in CSF or other sample, **or** evidence of SARS-CoV-2-specific antibody indicating acute infection **and**
- other traditional cardiovascular risk factors

Thank you

