Severe Acute Respiratory Infection
Universal Surveillance

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Brazil

**Location:** occupies a large area along the eastern coast of South America and includes much of the continent's interior.

**Area:** 8,514,876 km².

**Population:** 206,000,000 inhab.
Epidemiological Surveillance of Influenza Viruses in Brazil

Influenza Sentinel Surveillance – Portaria n.183 de Jan 2014 e anexo da Portaria de Notificação Compulsória n.205 de 17 de Fevereiro de 2016

- Influenza like illness (ILI) – 5 samples/week
- Severe acute respiratory infection (SARI – ICU)
  - Information Systems – Sivep-gripe
- Goals and Indicators – Sentinel Surveillance

SARI – Universal Surveillance - Sinan Influenza Web

- Created in 2009 year due to the emerging of influenza A(H1N1) pandemic strain.

Hospitalization (SIH) and Mortality (SIM)

(Delay)

Outbreaks investigation (MoH, State and Municipal Secretariat of Health, and others)
Aim – notify SARI* from suspected influenza cases
  *fever, cough or sore throat and dyspnea (according to WHO recommendation)

Created in 2009 year due to the influenza A(H1N1)pdm09

- Notify only cases or death due to SARI
- From 2010 year hospitalized cases of SARI or death due to SARI.
SRAG - Universal Surveillance – created in 2009 (influenza pandemic) (Case definition consta na Ficha de Registro)

*Alteração da Ficha de Notificação em Setembro de 2012

Exportação de DBF – empresa terceirizada pelo MS (contratos) - Atualmente BI – dados diretamente da fonte do DATASUS
Brazil – 6,761 hospitals (30% public and 70% private)

Notified SARI cases:

- **2013**: 2,606 (hospitals) – 38,030 (SARI cases)
- **2014**: 1,885 (hospitals) – 19,287 (SARI cases)
- **2015**: 1,463 (hospitals) – 14,930 (SARI cases)
- **2016**: 3,232 (hospitals) – 55,827 (SARI cases)

**Observations:**

- Intense seasonality reveal an increase in the notification numbers.
- These data show a reasonable network activities.
SARI cases and deaths due to influenza, according to etiologic agent and epidemiologic week of initial symptoms. Brazil, 2009 a 2016.

Fonte: SINAN Influenza Web.
Sentinel Surveillance ILI and SARI
SENTINEL ILI. Brazil, 2013 a 2017 (EW 15).

Fonte: SIVEP-Gripe.
Universal – SARI surveillance
Laboratory Routine Impact
Impact of the total of samples analyzed from patients presenting influenza like illness (ILI), severe acute respiratory illness – Intensive Care Unit (SARI – ICU) and Universal SARI in the Laboratory capacity during influenza season 2016 in the state São Paulo state.

São Paulo (SP)  
2015: 7,340  
2016: 23,300  
2017: 3,053  
Total: 33,693

Total of result tests deposited in the SIGH  
65,536

Impact on the total of samples analyzed from patients presenting influenza like illness (ILI), severe acute respiratory illness – Intensive Care Unit (SARI – ICU) and Universal SARI in the Laboratory capacity during influenza season 2016 in the state São Paulo state.

Laboratory capacity  
2 plates/day | 11 plates/day  
7 days/week | 4 machines  
Manual extraction of nucleic acid.  
Cooperation of more 9 colleagues from other laboratory  
4 Temocicladores;  
Results in the SIGH systems – two professionals

23 Sentinel Units in the state of São Paulo  
7 ILI and 7 SARI only in the city of SP
Influenza Viruses Surveillance by the - National Influenza Centre Instituto Adolfo Lutz - from 2015 to April 2017.

Total of positive samples = 5,937 (24.60%)
Total of A(H1N1)pdm09 = 5,306 (89.40%)
Total of A(H3N2) = 55 (0.90%)
Total of B viruses = 576 (9.70%)

Influenza viruses identified by Institute Adolfo Lutz, from January to December 2016.
Benefits and Challenges

- The Universal SARI surveillance provisional benefits:
  - Provide the opportunity to improve the influenza virus prevention and control strategies: (medicaments, training courses, seminars, etc.)
  - Seasonality studies (mathematic models)
  - REVELAC-i
  - Epidemiological pattern of morbimortality aim to discuss treatment protocols clinique management and vaccination priority groups.
  - Is a valuable tool towards to identify influenza virus circulation in Brazilian counties that still needs a lot of effort to maintain the sentinel surveillance follow up.

- Challenges:
  - Lack of denominator;
  - High costs requirement;
  - Laboratory routine impact;
  - Death count by the midia (panic scenarios)
Universal SARI has been discussed into the influenza virus surveillance context aiming to achieve a balance between the benefits and the challenges. There are a consensus that prior to conduct a SARI – Universal notification model review the sentinel influenza surveillance (ILI and SARI) – urge a strong strategy aiming to fortify its activities in the national territory.
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