

Ministry of Health (MS)
Secretariat of Health Surveillance(SVS)
Department of Communicable Disease Surveillance(DEVIT)
General Coordination of Communicable Diseases(CGDT)

Epidemiological surveillance of Leptospirosis in Brazil

International Workshop of the Oswaldo Cruz
Institute/FIOCRUZ for Leptospirosis Research Based on
Country Needs & 5th Global Leptospirosis Environmental
Action Network (GLEAN) Meeting

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Ministério da
Saúde



POLITICAL ADMINISTRATIVE DIVISION -BRAZIL

Longitud : 8,5 millions km2

Borders : 09 países

Regions : 05

Federal Units : 27

City : 5.570

Population: 204 millions

Single Health System:

Universal

Decentralized

Hierarchized

Equanimed



EPIDEMIOLOGICAL PATTERNS OF LEPTOSPIROSIS FOUND IN BRAZIL

- Endemic disease distribution in the country, occurring during all months of the year;
- Leptospirosis is registered in all Brazilian states, with an average annual **incidence of 2.1 / 100.000hab** and **lethality of 8.7%**;
- According to the **Ordinance nº 1.271/2014 SVS/MS**, leptospirosis is inserted in the Annex of disease of immediate notification to the municipalities and this requires the investigation of suspected cases is performed within 24 hours. All suspected cases must be recorded in the Notification Diseases Information System - SINAN, following the rules and routines established by the SVS/MS.

EPIDEMIOLOGICAL PATTERNS OF LEPTOSPIROSIS FOUND IN BRAZIL

- **Annual urban epidemics**, especially in poor communities, after-floods and floods, where the majority of the detected cases annually.



EPIDEMIOLOGICAL PATTERNS OF LEPTOSPIROSIS FOUND IN BRAZIL

- **Outbreaks in rural areas**, little detected by surveillance systems, especially in subsistence culture sites such as rice culture;
- **Outbreaks related to the occurrence of natural disasters of great magnitude**, such as floods in Santa Catarina in 2008 (496 cases) and 2011 (678 cases), Pernambuco in 2011 (378 cases), Sao Paulo in 2011 (910 cases) and Acre in 2014 (429 cases).



OTHER SITUATIONS OF RISK FOR LEPTOSPIROSIS IN BRAZIL



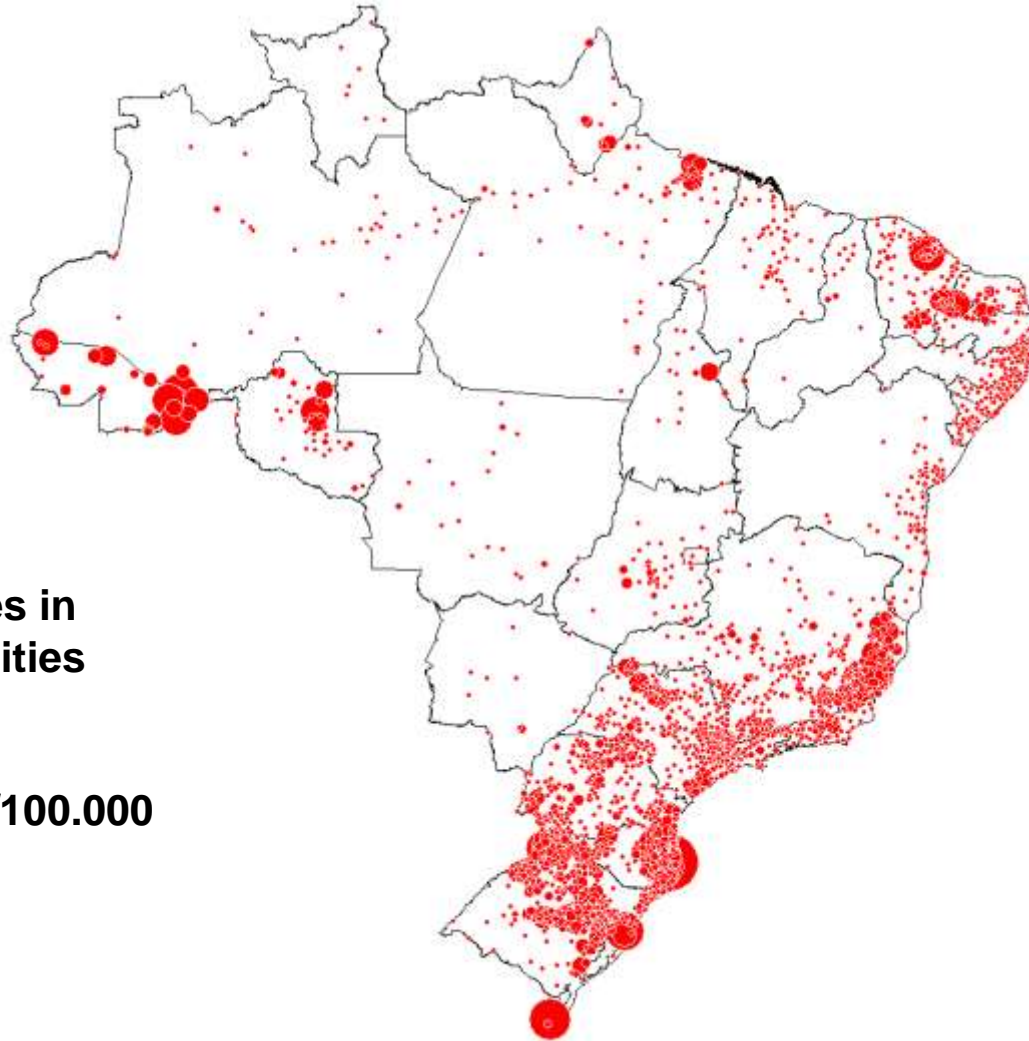
EPIDEMIOLOGICAL PATTERNS OF LEPTOSPIROSIS FOUND IN BRAZIL

- Most affected population were **males** (78.5%)* and the most affected age group **20- 49 years** (59.5%)*
- More infections occur in the **around housing** (41,2%)*
- Higher incidence of the disease regions are: **North** (26.4%)* and **South** (25.5%)*

*Data SINAN-NET, in the period from 2009 to 2014.

Leptospirosis: epidemiology

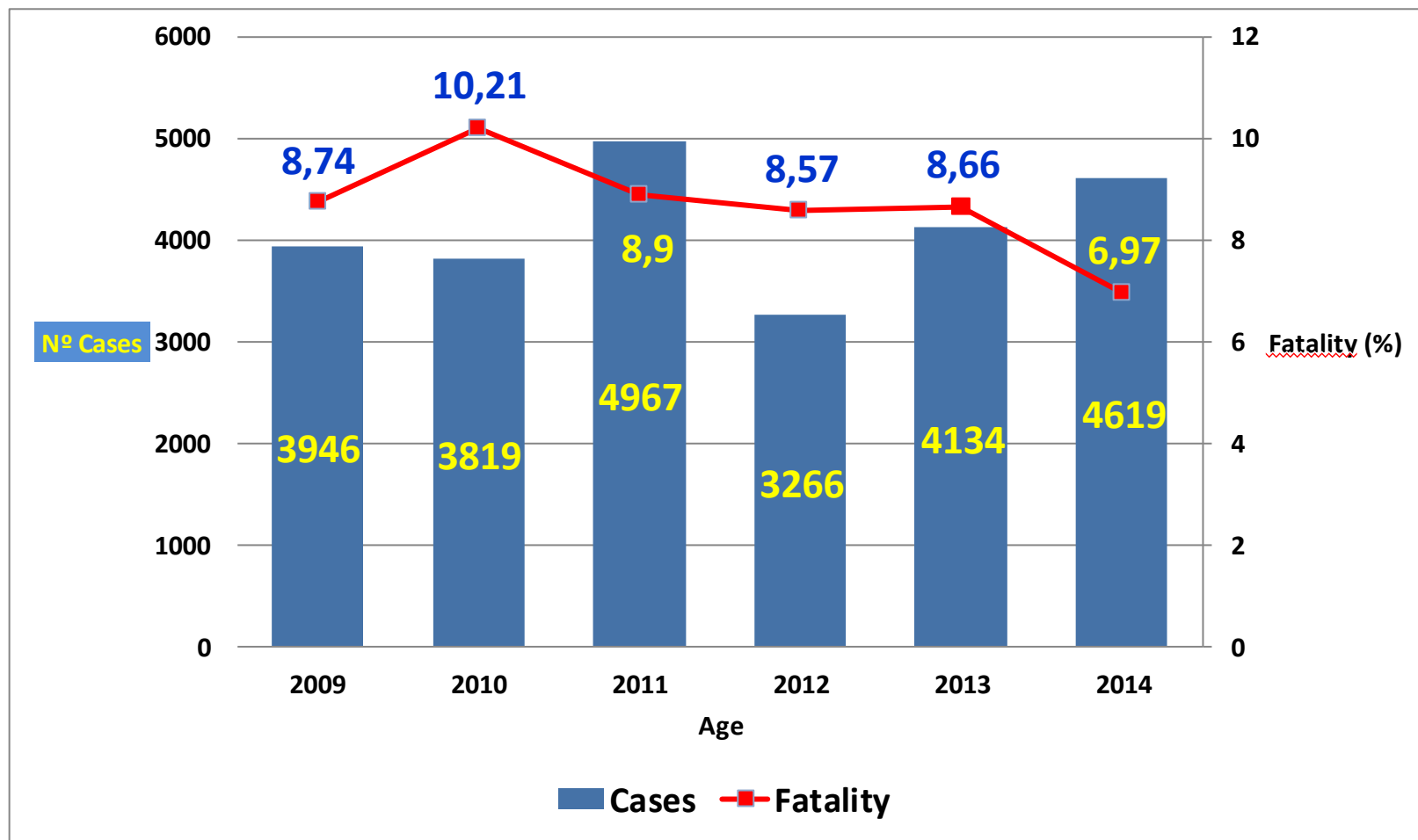
Incidence of leptospirosis according to the city of the residence in Brazil from 2009 to 2014. Representation of intensity according to size of the circles.



- Confirmed cases in 2.059 municipalities (36,7%)
- Incidence 2,1/100.000 hab.

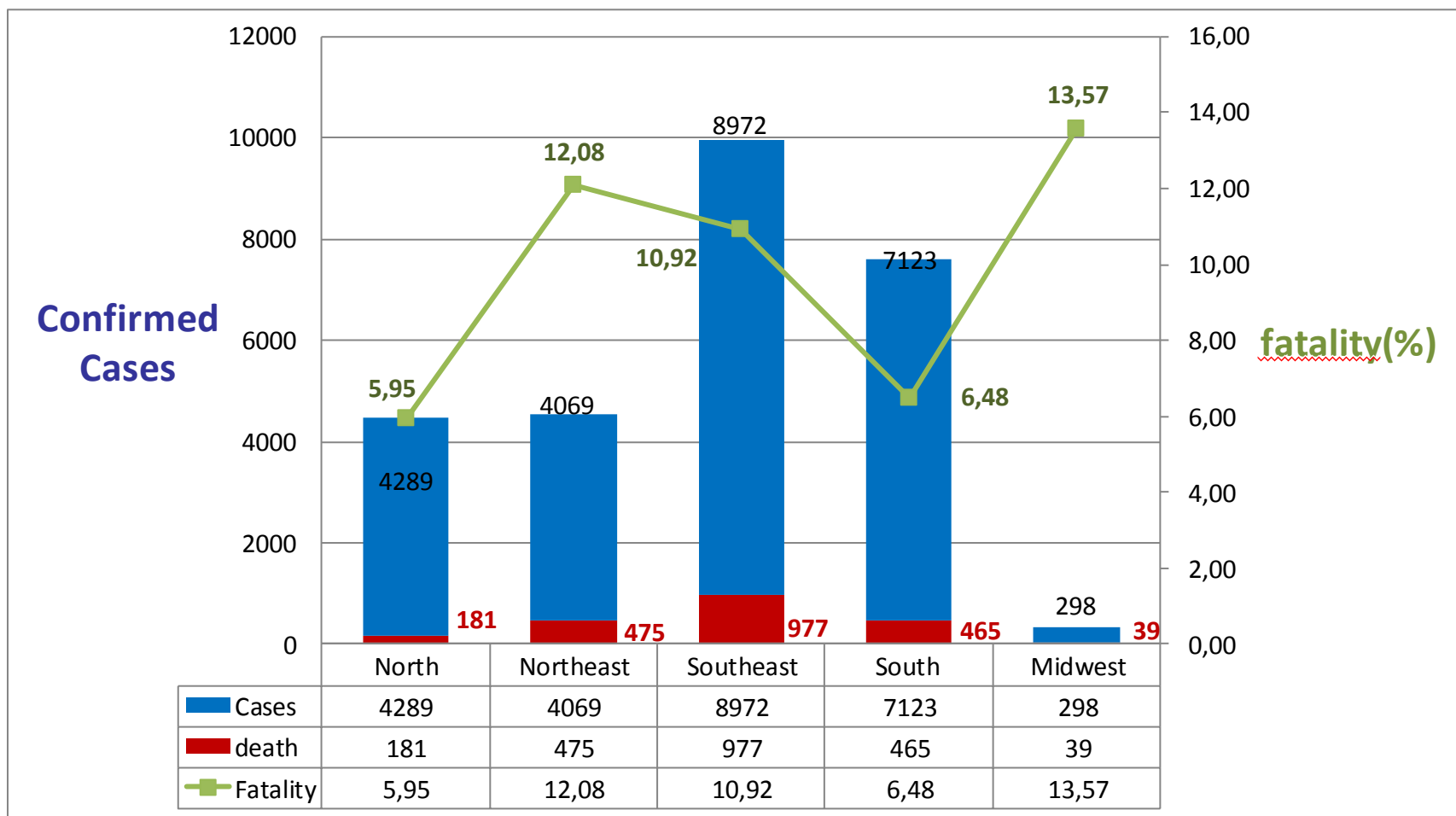
Leptospirosis: epidemiology

Confirmed cases of leptospirosis and fatality rate in Brazil, 2009-2014



Leptospirosis: epidemiology

Confirmed cases, deaths and average fatality rate for UF Leptospirosis notification. Brazil, 2009-2014.



Data: Sinan Net/SVS/MS



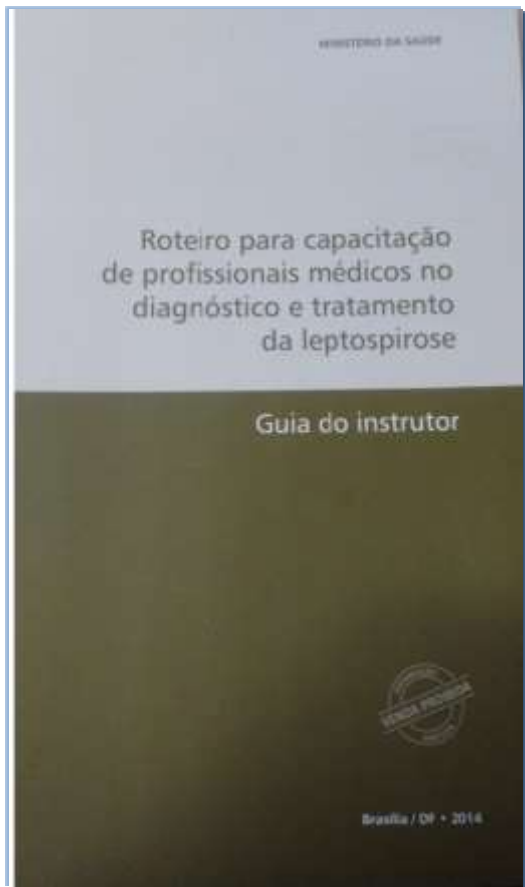
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Activities carried out by epidemiological surveillance in Brazil

- Monitor the occurrence of cases and outbreaks and determine its spatial and temporal distribution;
- Adopt preventive and control measures for persons, the environment and animal reservoirs;
- Conducting training and capacity building for surveillance, diagnosis and treatment of leptospirosis and control urban rodents, in partnership with states and municipalities;
- Preparation of information materials (manuals, guides, posters) to support states and municipalities in their surveillance activities;
- Partnerships / financial support to research institutions to find new behaviors that confronts the disease;

Recent publications used in training



“Roadmap for training medical professionals in the diagnosis and treatment of leptospirosis – Instructor guide”



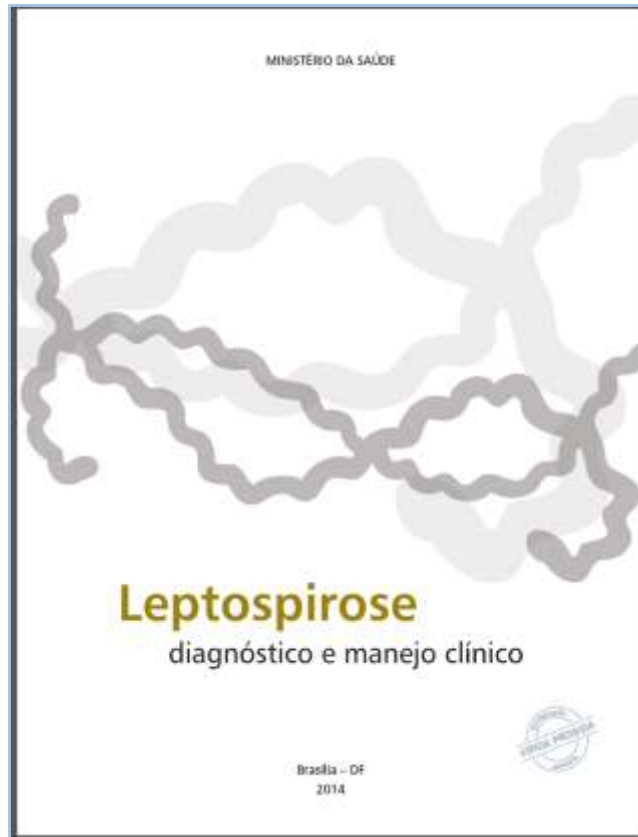
“Roadmap for training medical professionals in the diagnosis and treatment of leptospirosis – Student guide”



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Recent publications used in training



**Leptopirosis –
diagnosis and clinical
management**



Guide surveillance in health

Brazilian Policies

➤ Ordinance N° 1.007 de 2010

In order to strengthen health surveillance measures regarding family health teams, this Ordinance shall enter Professional Combat Agent to Endemic Diseases - ACE on primary Health This happens to be another tool to optimize notifications cases of leptospirosis, since their vigilance is passive.

➤ Technical Note N° 71 de 2011.

The publication of this technical note is intended to alert the epidemiological surveillance of the State and Municipal Health Department, about the main risks for Leptospirosis and measures to be adopted during periods of flooding, by which time it is often the occurrence of disease outbreaks.

➤ Ordinance N° 1.271 de 2014

This Ordinance repealed the former Ordinance No. 104 of 2011, which defined the list of notification diseases of the Ministry of Health. It represented a breakthrough for Leptospirosis Surveillance in the country, to include this complaint not only in disease list reportable, but also immediate notification only for the Municipal Health Department, which should report a suspected case of the disease in up to 24 hours.

➤ Ordinance nº 1.138, de 23 de maio de 2014

Defines the actions and services of health surveillance aimed at prevention and control of zoonoses and accidents caused by venomous and poisonous animals of relevance to public health.

Joint Technical Note N° 01 de 2013.

In order to reduce the number of false-positive laboratory information, the Ministry of Health conventionally from 2013, the use of the ELISA method in microagglutination more seroconversion - MAT (pattern gold, recommended by WHO) for confirmation of cases of leptospirosis.

Diagnostic Tests Used in Routine Leptospirosis in Brazil

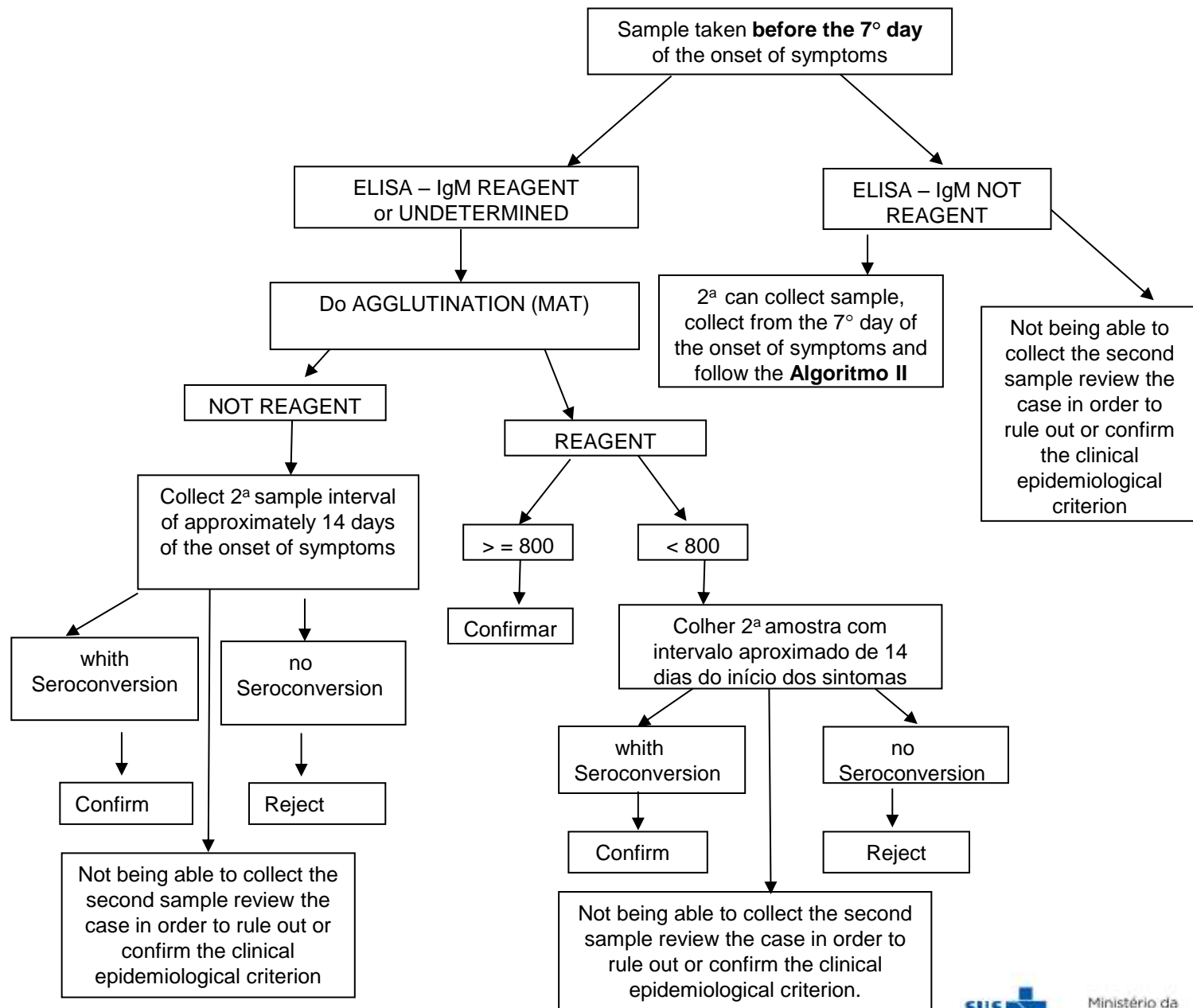
- **ELISA (IgM)**
 - **Microagglutination Test-MAT (Gold Standard)**
 - **Isolation of leptospira**
 - **Immunohistochemistry (death investigation)**
 - **PCR (death investigation)**
- } **SVO***

*** SVO = deaths verification service**

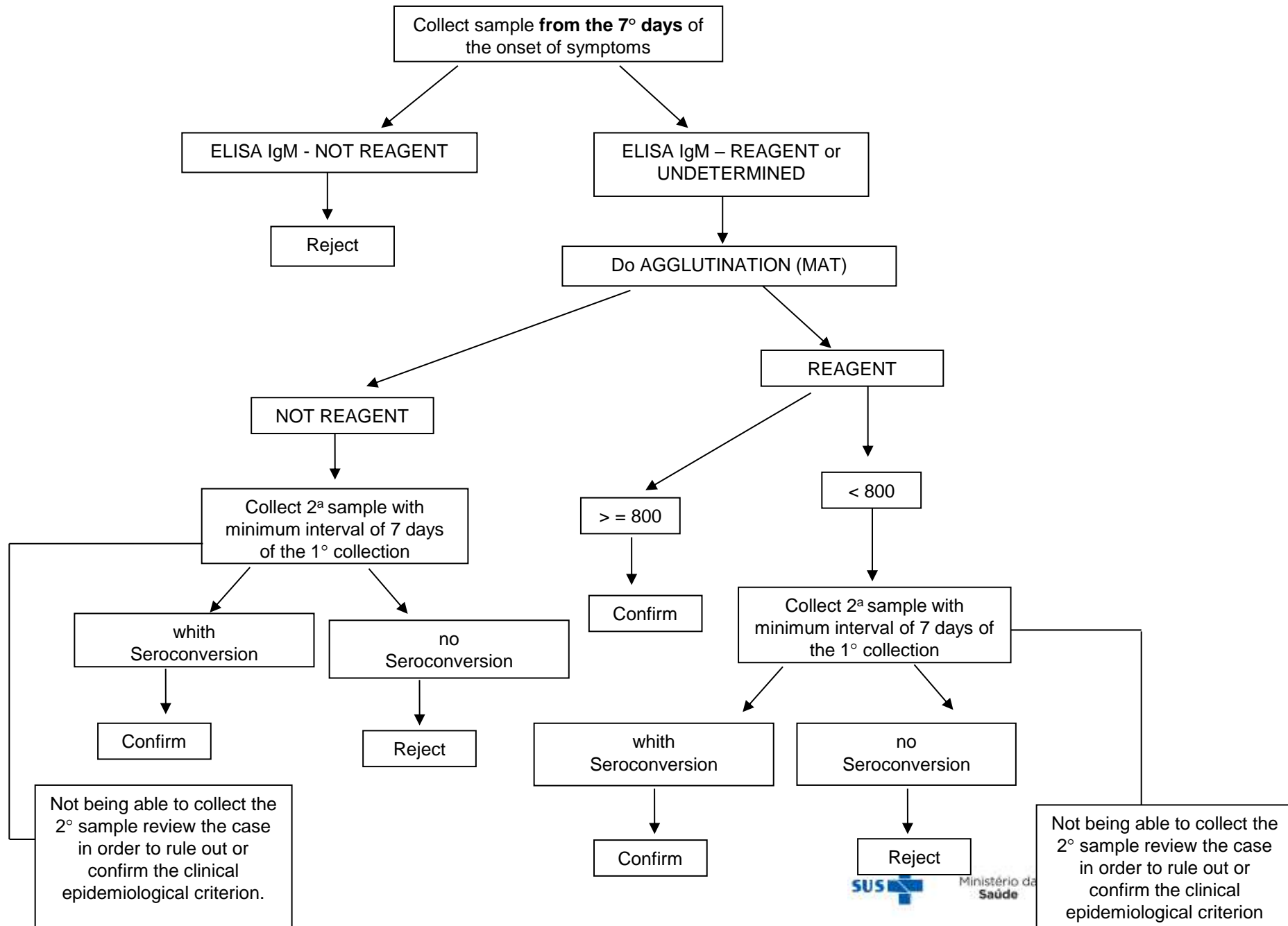
Diagnosis of Leptospirosis: Gold Standard

- In order to reduce the number of false-positive of laboratory confirmations, the Ministry of Health, established through the **Technical Note N°01/2013**, began to use the methods ELISA and serological testing using Microagglutination Test-MAT (gold standard, recommended by WHO), to confirm the cases of leptospirosis. The current challenge of the Ministry of Health is the implementation of these methods in all the Central Laboratories.

Algoritmo I: closure of the case of leptospirosis when sample is collect before the 7° day of onset of symptoms.



Algoritmo II: closure of the case of leptospirosis when sample is collect from the 7° day of the onset of symptoms



Distribution of Leptospirosis Laboratories in Brazil



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SVS Leptospirose

 Doença infecciosa febril, de início abrupto, cujo espectro pode variar desde um processo inaparente até formas graves. Trata-se de uma zoonose de grande importância social e econômica. Apresenta elevada incidência em determinadas áreas, alto custo hospitalar e perdas de dias de trabalho, além do risco de letalidade, que pode chegar a 40%, nos casos mais graves. Sua ocorrência está relacionada às precárias condições de infraestrutura sanitária e alta infestação de roedores infectados. As inundações propiciam a disseminação e a persistência do agente causal no ambiente, facilitando a ocorrência de surtos.

Descrição da Doença	Vacinação	Viajantes
Situação Epidemiológica / Dados	A vacinação de animais domésticos e de produção (cães, bovinos e suínos), disponível em serviços particulares...	Deve-se evitar ambientes que possam estar contaminados por urina de ratos e outros animais, bem como entrar em contato ...
Orientações	+ Leia mais	+ Leia mais
Tratamento	Publicações	Contatos da área
Informações Técnicas	Confira as publicações sobre o tema...	Unidade Técnica de Vigilância de Zoonoses - UVZ/CGDT ...
Perguntas e Respostas	+ Leia mais	+ Leia mais

Thanks!

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