

Comparison of Vaccination Coverage of Dogs and Cats in Annual Vaccination Campaigns against Rabies, in São Paulo Municipality, from 2004 to 2012



Noemia Tucunduva Paranhos^{1*}, Maria Cristina Novo de Campos Mendes¹, Fernanda Bernardi¹, Elisabete Aparecida da Silva¹

1 Centro de Controle de Zoonoses. Coordenação de Vigilância em Saúde. Secretaria de Saúde do Município de São Paulo. SP. Brasil.

* email: noemiap@prefeitura.sp.gov.br

Introduction

Vaccination campaign against rabies of dogs and cats in Sao Paulo Municipality is one of the activities of the Rabies Control Program developed since 1973 by the Center for Zoonoses Control and it lasts 14 days. It was decentralized since 2004 when it became executed by the Regionalized Services of Health Surveillance (SUVIS), under the supervision and coordination of the Center for Zoonoses Control. With this strategy a greater number of vaccination boots was available. In 2012 the campaign was interrupted at the fourth day due to the occurrence of adverse effects temporally associated to the vaccine higher than those observed in previous years, having been vaccinated 24.75% (247.550 animals) of the estimated target. In 2011 the vaccine was not distributed by the Ministry of Health. In the year 2012 the vaccine was again available and the Campaign occurred from May 21 to June 03. It was analyzed the vaccination in all 96 Administrative Districts (DA) of the Municipality from 2004 to 2012, in order to verify the adhesion trend and if the interruption of the campaign in 2010 and 2011 affected the number of vaccinated animals in 2012.

Material and Methods

It was made a comparative analysis of the number of dogs and cats vaccinated in the vaccination campaigns against rabies of dogs and cats from 2004 to 2012, according to DA classification of social inclusion/exclusion areas (homogeneous areas). Data from 2010 were excluded because of campaign interruption in the fourth day. Homogeneous areas consider intra-urban differences grouping all 96 DA into five regions of the Municipality with intern homogeneity, according to social, economical and environmental characteristics (LIRA, 1998). This classification is based on the Social Exclusion Index* IEX (SPOSATI, 1996), the sum of four indexes per District, based on: autonomy, human development, life quality and equity.

Administrative Districts (DAs), according to inclusion/exclusion social areas (AHs), Sao Paulo,

¥	Distrito Administrativo	SUVIS	AH	Distrito Administrativo	SUVIS
1	Butantă	Butantā	3	Vila Prudente	Vila Prudente/Sapopemba
1	Perdizes	Lapa	3	Socorro	Socorro
1	Alto Pinheiros	Pinheiros	4	Raposo Tavares	Butantā
1	Itaim Bibi	Pinheiros	4	Rio Pequeno	Butantā
1	Jardim Paulista	Pinheiros	4	Sé	Sé
1	Pinheiros	Pinheiros	4	Ermelino Matarazzo	E. Matarazzo
1	Santana	Santana/Tucuruvi	4	Ponte Rasa	E. Matarazzo
1	Moema	Vila Mariana/Jabaguara	4	Itaquera	Itaquera
1	Saúde	Vila Mariana/Jabaguara	4	José Bonifácio	Itaquera
1	Vila Mariana	Vila Mariana/Jabaguara	4	São Mateus	São Mateus
	Campo Belo	Santo Amaro	4	São Rafael	São Mateus
1	Santo Amaro	Santo Amaro	4	Limão	C.verde/Cachoeirinha
2	Morumbi	Butantă	4	Freguesia do Ó	FÖ/Brasilåndia
2	Barra Funda	Lapa	4		
2	Lana		4	Jaçanā	Jaçană/Tremembé
2	Vila Leopoldina	Lapa	4	Tremembé Pirituba	Jaçanā/Tremembé
2	Rela Vista	Lapa Sé			Pirituba
2			4	Vila Maria	V. Maria/V.Guilherme
2	Cambuci	Sé	4	Vila Medeiros	V. Maria/V.Guilherme
2	Consolação	Sé	4	Brás	Moóca/Aricanduva
~	Cursino	Ipiranga	4	Vila Formosa	Moóca/Aricanduva
2	Mooca	Moóca/Aricanduva	4	Artur Alvim	Penha
~	Tatuapé	Moóca/Aricanduva	4	Vila Matilde	Penha
2	Campo Grande	Santo Amaro	4	Jabaquara	Vila Mariana/Jabaquara
8	Vila Sônia	Butantā	4	Sapopemba	Vila Prudente/Sapopemb
3	Jaguara	Lapa	4	Campo Limpo	Campo Limpo
3	Jaguaré	Lapa	4	Vila Andrade	Campo Limpo
3	Bom Retiro	Sé		Cidade Tiradentes	Cid.
3	Liberdade	Sé		Guaianases	Guaianases
3	República	Sé		Lajeado	Guaianases
3	Santa Cecilia	Sé	5	Itaim Paulista	Itaim Paulista
3	Cidade Lider	Itaquera		Vila Curucá	Itaim Paulista
3	Casa Verde	C.verde/Cachoeirinha	5	Parque do Carmo	Itaquera
3	Anhanguera	Perus	5	lguatemi	São Mateus
3	Jaraguá	Pirituba	5	Jardim Helena	São Miguel
	São Domingos	Pirituba	5	São Miguel	São Miguel
~	Mandagui	Santana/Turumni	5	Vila Jacui	São Miguel
3	Tucuruvi	Santana/Tuguruvi	5	Cachoeirinha	C.verde/Cachoeirinha
3	Vila Guilherme	V. Maria/V.Guilherme	5	Brasilándia	FÖ/Brasilåndia
	loiranga	lpiranga	5	Perus	Perus
3	Sacomá	Ipiranga	5	Capão Redondo	Campo Limpo
3	Agua Rasa	Moóca/Aricanduva	5	Cidade Ademar	Cidade Ademar
3	Aricanduva	Moóca/Aricanduva	5	Pedreira	Cidade Ademar
2	Belém	Moóca/Aricanduva	6	Jardim Angela	M Boi Mirim
3	Carrão	Mooca/Aricanduva Mooca/Aricanduva		Jardim Angela Jardim São Luiz	M Boi Minm
	Pari	Mooca/Ancanduva Mooca/Aricanduva	5	Jardim São Luiz Marsilac	M' Boi Minm Parelheiros
3			5		
3	Cangaíba	Penha		Parelheiros	Parelheiros
3	Penha São Lucas	Penha Vila Prudente/Sapopemba	5	Cidade Dutra Graiaú	Socorro Socorro

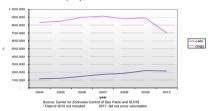
Map of Sao Paulo Municipality, according to homogeneous areas



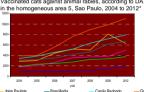
Results

Between 2004 and 2009 there was an increase of 17.23% in the total of vaccinated animals. In 2008 it was observed a decrease of 3.86% in the number of vaccinated dogs, probably due to a vaccine shortage at the end of the Campaign and yet there was an increase of 7.7% in feline vaccination in relation to 2007. In 2012 there was a decrease of 16.6% in the overall total of vaccinated animals, a decrease of 21.18% for dogs and an increase of 2.27% for cats when compared to 2009. An increase of vaccinated feline was observed in 42 DA when comparing these years, with 31 Das belonging to the higher exclusion areas (homogeneous areas 4 and 5). Vaccinated cats in the Iguatemi, Pedreira, Perus and Jacanã DA, were respectively 21.23%, 31.41%, 38.3% and 40% higher than 2009. There was a decrease in vaccinated cats of 53 Districts of higher inclusion areas such as Tatuapé, Santa Cecília, Saúde and Santana. In relation to dog vaccination, in 2012 there was an overall decrease in 89 of 96 DA and in 29 of them vaccination was lower than 70% of the total of 2009. Only the DA Marsilac, Vila Curuçá and Bela Vista vaccinated more dogs than in 2009.

Total number of Dogs and Cats vaccinated in vaccination campaigns against animal rabies in Sao Paulo Municipality, 2004 to 2012*



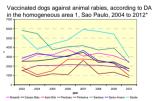
Vaccinated cats against animal rabies, according to DA



Vaccinated dogs against animal rabies eous area 5, Sao Paulo, 2004 to 2012 2005 2006 2007 2008 2009
year

— Italim Paulista — Jardim Angala — Jardim Heliena
5 Luiz — Lajaudo — Parelhelino — Parque do Carmo

Source: Center for Zoonoses Control of Sao Paulo and SUVIS
* Data of 2012 not included 2011; did not occur vaccination



Source: Center for Zoonoses
* Data of 2012 not included

Conclusion

Some factors that may have interfered in the decrease of the number of vaccinated animals in 2012: the occurrence of adverse effects temporally associated to the vaccine in 2010 with a great number of notification and the anticipation of the Campaign of 2012 to May/June, instead of its traditional occurrence in August.

For both species the lowest adhesion was observed in the most included Districts which may be due to the vaccination of the animals in private veterinary practices, motivated by the occurrence of adverse effects and the two years interval between the campaigns of 2010 and 2012.

The annual trend of vaccinated animals in the Municipality until 2009 was growing, especially for cats. It is suggested the continuity of trend studies to establish correlations of adhesion by the owners to the Annual Vaccination Campaign conducted by the Municipality of Sao Paulo, with vaccines distributed by the Ministry of Health.

Adverse effects during vaccination campaigns may interfere in the adhesion by owners of animals in further years.







