Tobacco smoking among pediatric residents in Argentina. Current prevalence and trend over the past 10 years

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ABSTRACT

Introduction. Pediatricians are in a strategic position to prevent smoking.

Objectives. To estimate the prevalence of smoking among pediatric residents, analyze associated factors, describe preventive actions, and assess the differences observed over the past decade.

Methods. Cross-sectional study with a self-administered, anonymous survey conducted among pediatric residents from eight Argentine hospitals. Smoking habit, associated factors, and attitude towards patients' or their parents' smoking were evaluated; results were compared to those obtained in 2002.

Results. Out of 448 surveyed physicians, 20.1% smoked.

There were no significant differences between smokers and non-smokers in terms of gender, having children, number of on-call shifts, and having a supervisor who smokes.

Having a parent who smoked was a risk factor for tobacco use only among women (OR: 1.98; 95% CI: 1.09-3.61; p = 0.01). Surveyed residents living with a couple had a lower smoking rate (OR: 0.57; 95% CI: 0.34-0.96; p = 0.03). Only 18.1% referred having an active behavior towards smoking patients, no differences were observed between smokers and non-smokers.

In addition, there were no differences in smoking prevalence from 2002, but there was a higher rate of residents who advised their patients (32.4% versus 26.1%; p < 0.01) and warned them against smoking (37.7% versus 18.6%; p < 0.01), and of those who received information on this topic during their training (63.6% versus 39.8%; p < 0.01).

Conclusions. Among resident pediatricians, 20.1% were smokers, with a higher prevalence among women with a father or mother who is a smoker.

The rate of active behavior regarding patients or parents who smoke was very low. In spite of official policies, tobacco use in this group has not changed over the past decade, but there was an increase in the rate of those who received information during their training and of those who advised their patients of smoking risks.

Key words: *residency and internship, tobacco, smoking, smoking cessation, professional role.*

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INTRODUCTION

Tobacco use is the leading preventable cause of death; it is estimated to cause more than 5 million deaths every year around the world.[1]

Due to tobacco morbidity and mortality, smoking implies a significant financial cost, which can account for up to 15% of the expenditure on health.[2]

Physicians find themselves in a strategic position to influence their patients' smoking habit. This is particularly important among pediatricians, because they can take actions towards the prevention of smoking initiation among children and adolescents, and encourage their parents to quit smoking,[4] thus reducing children exposure to environmental tobacco smoke.[5]

Due to the particular work load entailed by the residency and the

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stress suffered by residents, they can be more exposed to smoking.[6] In 2002, an assessment on the smoking habit among pediatric residents in Argentina was conducted and it was found that 22.1% of them smoked.[7] In accordance with the guidelines of the World Health Organization Framework Convention on Tobacco Control,[8] different related policies have been implemented in Argentina, which led to a reduction in the prevalence of tobacco use from 39.8%[9] to 27.1% over the past 10 years.[10] It was expected that following government actions, smoking prevalence among resident physicians would be reduced to at least a similar rate.

The objective of this article was to estimate the prevalence of smoking among pediatric residents, assess possible associated risk factors, describe the behavior of surveyed physicians in relation to their patients' or parents' smoking, and compare the results with those obtained in 2002.

MATERIAL AND METHODS

This was a cross-sectional study with a closed, self-administered, anonymous survey. The study was carried out during May 2011 in the eight Argentine children's hospitals that participated in the prior study:[7] Elizalde, Garrahan and Gutiérrez (Autonomous City of Buenos Aires), Santísima Trinidad and Infantil (Córdoba), Castro Rendón (Neuquén), Notti (Mendoza) and Sor María Ludovica (La Plata). All resident pediatricians present at their hospital on the day of the survey and who accepted to participate in the research were included, and those who were not working at the hospital at the time of the survey (paid leave, sick day, turnover, day off to complete formalities) were excluded.

Study outcome measures included gender; age; smoking habit; year of residency; number of weekly on-call shifts; household members, if the mother, father or supervisor smoked; age at initiation; hospital place and activities where smoking was more common; if smoking had increased since starting the residency; if information on how to encourage smoking cessation in patients had been received during residency or university training, and their attitude towards patients' or parents' tobacco use (if they asked about smoking, warned about smoking risks, and advised on cessation or not to start smoking). A dichotomous variable "active behavior" was established by assigning an affirmative value only if the subject answered "always" to the three questions about behavior (ask, warn, and advise).

For the purpose of this article, a smoker was defined as an individual who had smoked at least 100 cigarettes, 20 cigars, or 20 pipes, and who was a smoker at the time of the survey.

Sample size: given that there were approximately 1200 pediatric residents in Argentina with a smoking prevalence of 22 ± 5%, and up to 10% may have refused to participate, the sample size was estimated at 230 subjects to achieve a 95% confidence interval. This was a convenience sample because participants were subjects who were taking part in the same residency programs as in 2002 so as to have comparable results. The selected sample comprises approximately 50% of all pediatric residents in Argentina. It was estimated that at least two thirds of them would be eligible for participation.

Statistical analysis: replies to each outcome measure were distributed using 95% confidence intervals, or mean and standard deviation, as applicable. The association between each predictor and outcome measure was estimated using the χ^2 test or Fisher's exact test, as applicable, by calculating the ORs and the corresponding 95% confidence intervals. For numerical variables, the difference between means was evaluated using the *t test*, if their distribution was normal, and the Mann-Whitney U test, if otherwise.

Finally, two logistic regression models were developed. One model assessed tobacco use among residents including the rest of the outcome measures; the other model explored residents' behavior towards their patients' smoking, including age, gender, personal and parental smoking habits, and information received.

The difference between the results of this study and those obtained in the 2002 study was determined by the t test or the χ^2 test, as applicable. A two tailed 0.05 significance level was assumed. Data were analyzed using the SPSS 17.0 software (SPSS Inc., Chicago, USA, 2002).

Ethical considerations: approval was requested to and obtained from each institution's Ethics Committee or Research Committee, in accordance with local standards.

Once the survey was completed, participants received material on smoking risks, contact data to receive smoking cessation counseling, and a guideline on how healthcare professionals should act regarding their patients' smoking. All data were collected in an anonymous and confidential manner.

RESULTS

The survey was administered in May 2011, with 480 (69.7%) of 689 staff residents present at their hospitals; the rest of the physicians were absent due to turnover, leaves or service reasons. All accepted to complete the survey. Out of 480 surveys collected, 32 were excluded due to completion mistakes, so the analysis included data from 448 surveys (*Table 1*).

Smoking prevalence among pediatric residents was 20.1% (95% CI: 16.5-24.2) (90/448) (*Table 2*).

Age at the onset of smoking habit was 17.2 ± 2.9 years old. Open spaces were identified as the most common place to smoke inside the hospital by 45.1% of the surveyed residents. In relation to how entering the residency program affected their habit, 29.8% referred that they started smoking more after beginning the residency, while 27.4% quitted smoking, and 15.3% reduced tobacco use.

No significant differences were found between smokers and non-smokers in terms of gender, having children, number of weekly on-call shifts, or having a direct supervisor who smoked (*Table 3*).

The history of having a smoking parent was a risk factor for tobacco use only among women (OR: 1.98; 95% CI: 1.09-3.61; p= 0.01).

Those living with a couple smoked less than those who lived on their own, with their parents, relatives or friends (15.4% versus 23.4%; p= 0.05; OR: 0.6; 95% CI: 0.25-1).

Regarding their behavior towards smoking patients, 46.7% indicated that they always asked their patients and their parents if they smoked; 37.7% always warned them about smoking risks, and 32.4% always advised them on how to quit smoking or prevent them from starting, with 18.1% having an active behavior (always ask, warn and advise) (see *Table 2*). Those who had received information on this issue during their training referred that they asked and advised their patients more frequently than those who had not (OR: 1.58; 95% CI: 1.05-2.38; p= 0.02 and OR: 1.63; 95% CI: 1.04-2.55; p= 0.02, respectively), with no significant differences in terms of warning (OR: 1.49; 95% CI: 0.97-2.28; p= 0.05). No behavioral differences were found between smokers and non-smokers, but those who had received information during their training most usually had an active behavior (OR: 2.09; 95% CI: 1.20-3.65; p= 0.005).

Multivariate analysis: when age, gender, number of on-call shifts, living with a couple, smoking father, smoking mother, and smoking supervisor are included in a multivariate model, only the fact of living with a couple appeared to be a protective factor against smoking (OR: 0.57; 95% CI: 0.34-0.96; p= 0.03).

A second multivariate model was developed to evaluate active behavior with the inclusion of age, gender, smoking father, smoking mother, smoking resident, and having received information. Only receiving information during training was an independent predictor of having an active behavior towards their patients' or parents' smoking (OR: 1.98; 95% CI: 1.16-3.36; p= 0.012).

Comparison with the previous study: no significant decrease in smoking prevalence was observed (20.1% versus 22.1%; OR: 0.89; 95% CI: 0.62-1.27; p= 0.5), but there was a higher rate of resident pediatricians who advised (32.4% versus 26.1%; OR: 2.09; 95% CI: 1.48-2.96; p= 0.00001) and warned their patients (37.7% versus 18.6%; OR:

TABLE 1. *Distribution of participating resident pediatricians by hospital*

Hospital	City	Total residents	participants		Percentage out of the total	
			n	%	2011	2002
Elizalde	Buenos Aires	116	99	85.3	22.1	27.5
Garrahan	Buenos Aires	145	54	37.2	12.1	9.5
Gutiérrez	Buenos Aires	154	90	58.4	20.1	18.9
Santísima Trinidad	Córdoba	85	49	57.6	10.9	12.6
lnfantil	Córdoba	53	51	96.2	11.4	10.0
Sor María Ludovica	La Plata	78	53	67.9	11.8	10.9
Notti	Mendoza	44	39	88.6	8.7	7.4
Castro Rendón	Neuquén	14	13	92.9	2.9	3.2
Total		689	448	65.0	100.0	100.0

1.76; 95% CI: 1.25-2.36; p= 0.0005). In addition, there was a higher percentage of women in the residency (83.3% versus 76.2%; OR: 1.55; 95% CI: 1.08-2.23; p= 0.013) and a higher percentage of residents who had received information during their training (63.6% versus 39.8%; OR 2.67; 95% CI: 1.98-3.60; p < 0.001) (*Table 4*).

TABLE 2. *Distribution of outcome measures assessed in the studied population (n= 448)*

Characteristics	Percentage
Year of Pediatric Residency	
1er year	25.7
2nd year	25.7
3rd year	28.6
Female	83.3
Smokers	20.1
Living alone	25.5
Living with a couple	40.7
With children	8.5
Smoking mother	45.5
Smoking father	60
Smoking father and mother	33.9
Either smoking father or mother	71.7
Smoking direct supervisor	47.3
Received information	63.6
Always asks	46.7
Always warns	37.7
Always advises	32.4
Active behavior	18.1

DISCUSSION

Results showed that 20.1% of pediatric residents were smokers. In spite of the measures implemented to reduce tobacco exposure and use over the past years, smoking prevalence in the studied population did not change when compared to 2002 (22.1%).[7] This trend is similar to that observed at a national level in the same age group (25-34 years old) between 2005 (34.6%)[11] and 2009 (33.3%).[10]

If compared to what Haddock describes[12] in pediatric residents from New Jersey (7%), the prevalence of smoking among Argentine pediatric residents is high. However, such prevalence is lower than that reported for Argentine medicine students and medical practitioners. The F.U.M.Ar study,[13] conducted in 2004 in 12 schools of medicine in Argentina, estimated a smoking prevalence of 35.2% among students, while the TAMARA study[14] reported a prevalence of 30.2% in a sample of almost 6500 Argentine physicians.

Although physicians are aware of the consequences and resulting morbidity and mortality of tobacco use, the difference in smoking rates between physicians and the general population is still low in Argentina. In developed countries, this difference is much

TABLE 3. *Comparison of the distribution of potential predictors among current smoking resident pediatricians and non-smokers*

Characteristics	Smokers	Non-smokers	OR	95% CI	*p*
Age (years)	28.76 ± 2.05	28.37 ± 2.08			0.11
Male	15.6%	17%	0.90	0.45-1.75	0.74
Female	84.4%	83%	1.11	0.57-2.21	0.74
On-call shifts (2 or more)	81.1%	72%	1.66	0.91-3.09	0.08
Living on your own	32.2%	23.8%	1.52	0.89-2.59	0.1
Living with a couple	31.1%	43.1%	0.60	0.35-1.00	0.03
With children	7.8%	8.7%	0.89	0.34-2.21	0.79
Smoking mother	50%	44.4%	1.25	0.77-2.04	0.34
Smoking father	68.9%	57.8%	1.62	0.96-2.73	0.05
Both smoking parents	38.9%	32.7%	1.31	0.79-2.17	0.27
Smoking mother or father	80%	69.5%	1.75	0.97-3.20	0.04
Female - smoking father	73.7%	58.6%	1.98	1.09-3.61	0.01
Female - smoking mother	52.6%	44.8%	1.37	0.80-2.34	0.22
Male - smoking father	42.8%	54.1%	0.64	0.17-2.35	0.45
Male - smoking mother	35.7%	42.6%	0.75	0.19-2.85	0.64
Smoking direct supervisor	48.9%	46.9%	1.08	0.66-1.76	0.74
Received information	61.1%	64.2%	0.87	0.53-1.45	0.58
Active behavior	21.1%	20.4%	1.04	0.57-1.91	0.88

higher, with smoking prevalences between physicians and the general population of 6% and 40%, respectively, in The Netherlands;[15,16] of 5.5% and 23%, respectively, in Finland;[17,18] of 17% and 35%, respectively, in Japan;[18,19] and of 4% and 23%, respectively, in the USA.[18,20]

Unlike the study conducted in 2002, which showed an increase in tobacco use after entering the residency (38.9% smoked more after starting), this study indicated that such percentage decreased to 29.8%. This can be explained, in part, by the implementation of certain measures over the past years aiming at improving residents' quality of life, such as a reduction in the number of on-call shifts or the implementation of a break after a 24 hour shift at several hospitals.[21]

Although the studies done in Argentina focus on analyzing tobacco use among different specialty physicians,[14] there are no data in our field regarding smoking among residents of other specialties that would allow to make a comparative analysis with the studied population.

Almost half of the smokers (45.1%) indicated that they most commonly smoked in the hospital's open spaces. Although some of the districts included do not prohibit smoking in open spaces, in others, such as the Autonomous City of Buenos Aires (where more than 50% of the studied population work), smoking in health facilities is absolutely banned.[22]

Genetic, environmental, and cultural factors have been associated to tobacco use. This study found that having a smoking parent was a risk factor, consistent with the evidence that indicates that parental smoking is a risk factor for smoking initiation among adolescents.[23-26]

It is difficult to compare the residents' preventive attitude (ask, warn, advise) with other experiences because this information was collected differently in each study. However, as observed by other authors,[12,27] in this study results show that residents advised and warned their patients less than asked about smoking, because advising and warning require more knowledge on smoking cessation and capacity. Consistent with this, those who had received information during their training or residency tended to have a more active behavior towards smoking cessation (ask, warn and advise) than those who had not. Barnes Dodge[27] found that 83% of participants indicated that they asked about smoking, but only 36% advised their patients or caregivers to quit smoking, and that knowledge on smoking cessation resources was the factor most associated with such behavior. Evidence shows that specific training on this topic increases active behavior among healthcare professionals towards their patients' smoking.[28-30] However, since this is a survey administered to physicians, it should be noted that their active behavior could be overestimated. Few studies have collected data from patients: two studies conducted by Hymowitz,[28,31] indicate that only 10% and 21% of smokers, respectively, reported that their physician had offered them help to quit. The improvement observed in studied behaviors (ask, warn, and advise) can be related to a higher rate of healthcare professionals who received information on smoking cessation.

The high rate of participants that indicated having received information on smoking habit (63%) contrasts the 5.2% of medicine students who admitted having received formal training on smoking cessation in the Global Health Professions Student Survey (GHPSS). This demonstrates a deficiency in under-graduate training. Such difference can be explained because in our study we asked about having received information instead of asking about formal training, which underscores the difference between acquiring knowledge and the capacity to put it in practice. In addition, and although it was not part of the data collected in this survey, most participating facilities lack specific tools for an

TABLE 4. *Comparison with the results of the 2002 survey*[7]

	2002	2011	OR	IC 95%	*p*
Smoking	22.1%	20.1%	0.89	0.62-1.27	0.5
Female	76.2%	83.3%	1.55	1.08-2.23	0.013
Received information	39.8%	63.6%	2.67	1.98-3.60	<0.001
Always asks	39.5%	46.4%	1.33	0.99-1.78	0.05
Always warns	18.6%	37.7%	1.72	1.25-2.36	<0.001
Always advises	26.1%	32.4%	2.09	1.48-2.96	<0.001

effective smoking cessation intervention, which limits the possibility of an actual intervention on reducing tobacco exposure.

The minimum number of changes in tobacco use among pediatric residents in Argentina is possibly related to the fact that, although Argentina became a part of the World Health Organization Framework Convention on Tobacco Control in 2003, it has not yet ratified its adherence to the convention nor complied with its provisions.

CONCLUSIONS

Among resident pediatricians, 20.1% were smokers, with a higher prevalence among women with a smoking parent. The rate of active behavior regarding patients or parents who smoke was very low. In spite of official policies, tobacco use in this group has not changed over the past decade, but there was an increase in the rate of those who received information during their training and of those who advised their patients of smoking risks.■

REFERENCES

1. World Health Organization. WHO global report mortality attributable to tobacco. Geneva: World Health Organization; 2012. [Accessed on: June 1, 2012]. Available at: http://whqlibdoc.who.int/ publications/2012/9789241564434_eng.pdf.
2. Argentina. Ministerio de Salud y Ambiente de la Nación. Costos Directos de la Atención médica de las enfermedades atribuibles al consumo de tabaco en Argentina. Proyecto VIGIA. Buenos Aires: Ministerio de Salud y Ambiente de la Nación; 2005. [Accessed on: June 1, 2012]. Available at: http://msal.gov.ar/htm/site_tabaco11/pdf/costos_directos_at_medica.pdf.
3. Patiño C. El rol del médico en la lucha antitabáquica. *Alerg Inmunol Clin* 2000;17(Suppl 1):s26.
4. Stein RJ, Haddock CK, O'Byrne KK, Hymowitz N, Schwab J. The pediatrician's role in reducing tobacco exposure in children. *Pediatrics* 2000;106(5):e66.
5. Grupo Tabaquismo. Consenso sobre factores de riesgo de enfermedad cardiovascular en pediatría. Tabaquismo. *Arch Argent Pediatr* 2005;103(5):464-75.
6. Moreno MA. Resident stress revisited: a senior pediatric resident's point of view. *Pediatrics* 2003;112(2):411-4.
7. Ferrero F, Castaños C, Durán P, Blengini MT. Prevalencia del consumo de tabaco en médicos residentes de pediatría en Argentina. *Rev Panam Salud Pública* 2004;15(6):395-9.
8. Organización Mundial de la Salud. Convenio Marco de la OMS para el Control del Tabaco. WHO Document Production Services; 2003. [Consulta: June 1, 2012]. Available at: http://whqlibdoc.who.int/publications/2003/9243591010.pdf.
9. Secretaría de Programación para la prevención de la Drogadicción y la Lucha contra el Narcotráfico (SEDRONAR). Estudio Nacional sobre consumo de sustancias adictivas. Buenos Aires, Argentina; 1999.
10. Ferrante D, Linetzky B, Konfino J, King A, et al. Encuesta Nacional de Factores de Riesgo 2009: Evolución de la epidemia de enfermedades crónicas no transmisibles en Argentina. Estudio de corte transversal. *Rev Argent Salud Pública* 2011;2(6):34-41.
11. Argentina. Ministerio de Salud de la Nación. Encuesta Nacional de Factores de Riesgo 2005 -Informe de Resultados. Argentina; 2005. [Accessed on: June 1, 2012]. Available at: http://msal.gov.ar/ENT/VIG/Areas_Tematicas/Factores_de_Riesgo/PDF/Encuesta%20Nacional%20de%20Factores%20de%20Riesgo%202005_informe_final_breve.pdf.
12. Haddock CK, Pyle S, Hymowitz N, Schwab J, et al. Which pediatric residents assist and arrange follow-up for patients and parents who use tobacco? *J Adolesc Health* 2005;36(6):531-3.
13. Zabert G, Verra F, Kevorkof G, Lungo B, et al. Estudio F.U.M.Ar (Fumar en Universitarios de Medicina en Argentina). Informe final. 2004. [Accessed on: June 1, 2012]. Available at: http://www.msal.gov.ar/tabaco/images/stories/info-equipos-de-salud/pdf/paper-fumar-2004v4-CAEM-2005.pdf.
14. Zylbersztejn HM, Cardone A, Vainstein N, Mulassi A, ET al. Tabaquismo en médicos de la República Argentina: Estudio TAMARA. *Rev Argent Cardiol* 2007;75(2):109-16.
15. Kotz D, Wagena EJ, Wesseling G. Smoking cessation practices of Dutch general practitioners, cardiologists, and lung physicians. *Respir Med* 2007;101(3):568-73.
16. World Health Organization. Highlights on Health in the Netherlands. World Health Organization; 1997. [Accessed on: June 1, 2012]. Available at: http://www.euro.who.int/_data/assets/pdf_file/0018/130536/E62040.pdf.
17. Barengo NC, Sandstr6m PH, Jormanainen VJ, Myllykangas MT. Changes in smoking prevalence among Finnish physicians 1990-2001. *Eur J Public Health* 2004;14(2):201-3.
18. Shafey O, Dolwick S, Guindon E. Tobacco Control Country Profiles 2003. Atlanta, GA: American Cancer Society; 2003.
19. Ohida T, Sakurai H, Mochizuki Y, Kamal AM, et al. Smoking prevalence and attitudes toward smoking among Japanese physicians. *JAMA* 2001;285(20):2643-8.
20. Lee DJ, LeBlanc W, Fleming LE, Gómez-Marín O, et al. Trends in US smoking rates in occupational groups: the National Health Interview Survey 1987-1994. *J Occup Environ Med* 2004;46(6):538-48.
21. Ley N° 601. Modificación del Régimen de Residencias. Boletín Oficial de la Ciudad de Buenos Aires N° 1232. Buenos Aires, Argentina, 13 de julio de 2001.
22. Ley N° 1799. Ley de Control del Tabaco. Boletín Oficial de la Ciudad de Buenos Aires N° 2313. Buenos Aires, Argentina, 8 de noviembre de 2005.
23. Cogollo-Milanés Z, La Hoz-Restrepo F de. Consumo de cigarrillo y riesgo de dependencia de la nicotina de estudiantes de secundaria. *Rev Salud Publica* (Bogotá) 2010;12(3):434-45.
24. Giannakopoulos G, Tzavara C, Dimitrakaki C, Kolaitis G, et al. Emotional, behavioural problems and cigarette smoking in adolescence: findings of a Greek cross-sectional study. *BMC Public Health* 2010;10:57.
25. Bricker JB, Peterson AV, Robyn Andersen M, Leroux BG, et al. Close friends', parents', and older siblings' smoking: reevaluating their influence on children's smoking. *Nicotine Tob Res* 2006;8(2):217-26.
26. Fergusson DM, Horwood LJ, Boden JM, Jenkin G. Childhood social disadvantage and smoking in adulthood: results of a 25-year longitudinal study. *Addiction* 2007;102(3):475-82.
27. Barnes Dodge RA, Cabana MD, O'Riordan MA, Heneghan A. What factors are important for pediatric residents' smoking cessation counseling of parents? *Clin Pediatr* (Phila) 2008;47(3):237-43.

28 Hymowitz N, Schwab JV, Haddock CK, Pyle SA, et al. The pediatric residency training on tobacco project: four-year resident outcome findings. *Prev Med* 2007;45(6):481-90.
29 Collins RL, D'Angelo S, Stearns SD, Campbell LR. Training pediatric residents to provide smoking cessation counseling to parents. *Scientific World Journal* 2005;5:410-9.
30. Lee MT, Hishinuma ES, Derauf C, Guerrero APS, et al. Smoking cessation counseling training for pediatric residents in the continuity clinic setting. *Ambul Pediatr* 2004;4(4):289-94.
31. Hymowitz N, Schwab J, Haddock CK, Pyle S, et al. The pediatric resident training on tobacco project: baseline findings from the Parent/Guardian Tobacco Survey. *Prev Med* 2005;41(1):334-41.
32. Global Health Professions Student Survey (GHPSS). FACT SHEET Argentina - Medical Students (3rd Year Students Only). [Consultado: June 1, 2012]. Available at: http://new.paho.org/hq/dmdocuments/2010/2005%20Argentina%20GHPSS%20%28Medical%29