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Costs of acute otitis media in children in a city of the Colombian Caribbean coast

Costos de la otitis media aguda en niños de una ciudad de la costa caribe colombiana

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Abstract

Introduction: Acute otitis media is the main cause of consultation, antibiotic use, and ambulatory surgery in developed countries; besides, it is associated with an important economic burden. However, non-medical indirect costs of acute otitis media, which are relevant in this pathology, have been underestimated.

Objective: To estimate the costs of acute otitis media in pediatric patients in Cartagena, Colombia.

Materials and methods: We conducted a prospective study of micro-costing between 2014 and 2015. The direct and indirect costs of acute otitis media were determined through forms applied to parents or caregivers. Loss of productivity was estimated based on the monthly legal minimum wage of 2014 (COP \$616,000) (USD \$308).

Results: A total of 62 episodes of acute otitis media occurred. The total economic costs attributed per episode was COP \$358,954 (standard deviation: SD \pm COP \$254,903, i.e., USD \$179). The total economic burden was COP \$22,503,141 (USD \$11,250), the indirect costs per episode were COP \$101,402 (USD \$51), and the average care time spent by parents was 3.7 days.

Conclusion: The estimated costs of acute otitis media in this study were lower than the costs estimated in a review of high-income countries and similar to those of low-income countries such as Nigeria. Information on total costs (direct and indirect) of acute otitis media is necessary for public health decision-making and for full cost-effectiveness assessments.

Key words: Otitis media++ costs and cost analysis++ health expenditures++ direct medical costs++ health care costs++ cost of illness.

Resumen

Introducción. : La otitis media aguda es la principal causa de consultas médicas, de uso de antibióticos y de cirugías ambulatorias en los países desarrollados. Está asociada con una significativa carga económica, pero sus costos indirectos no médicos, los cuales son relevantes en esta enfermedad, se han subestimado.

Objetivo. : Estimar los costos de la otitis media aguda en pacientes pediátricos en Cartagena, Colombia.

Materiales y métodos: Se hizo un estudio prospectivo de microcosteo entre el 2014 y el 2015. Se determinaron los costos directos e indirectos de la otitis media aguda mediante encuestas a los padres o cuidadores. La pérdida de productividad se estimó con base en el salario mínimo legal vigente mensual del 2014 (COP\$616.000) (USD\$308).

Resultados. : Se presentaron 62 episodios de otitis media aguda. Los costos económicos totales por episodio fueron de COP \$358.954 (desviación estándar, DE: \pm \$254.903) (USD \$179). La carga económica total fue de COP \$22'503.141 (USD \$11.250), los costos indirectos por episodio fueron de COP \$101.402 (USD \$51) y el tiempo promedio empleado por los padres en el cuidado fue de 3,7 días.

Conclusiones. : Los costos estimados de la otitis media aguda en el presente estudio fueron menores a los estimados en países con ingresos altos y similares a los de países con ingresos bajos como Nigeria, según una revisión bibliográfica. La información sobre los costos totales directos e indirectos de la otitis es necesaria para la adopción de decisiones en salud pública y para hacer evaluaciones económicas completas de costo-efectividad.

Palabras clave: Otitis media, costos y análisis de costo, gastos en salud, costos directos de servicios, costos de la atención en salud, costo de enfermedad.

Acute otitis media is the most frequent upper respiratory tract infection in pediatric patients ¹. It is the main cause of medical visits or consultations, use of antibiotics, and ambulatory surgeries in developed countries ¹⁻³. Acute otitis media is an infection of the middle ear with an acute clinical onset of effusion and inflammation signs and symptoms, such as fever, irritability, otalgia, and otorrhea ⁴.

Around the world, there are approximately 361,590,000 cases of acute otitis media per year in children younger than five years of age. In the USA, at least eight out of every ten will have presented one or more episodes of acute otitis media by the time they are three years old ^{1,3,5,6}. The highest incidence of acute otitis media occurs between six and 18 months old ^{1,6}. The probability of developing acute otitis media decreases with age. Children older than three years present a lower incidence, probably because they have developed partial immunity against many of the microbial pathogens ⁶. In the study by Teele, *et al.* from 1989 the average number of episodes decreased from 1.2 cases per child during the first year to 0.4 cases per child in the seventh year of life ⁵. Other studies ^{1,7} have reported an average of 1.9, 1.7, and 1.1 episodes per year in children between 6-11, 12-23, and 24-35 months old, respectively. In Latin America, the incidence of acute otitis media varies between 4.25% and 6.78%².

In developing countries where access to health services is difficult, complications and sequels of acute otitis media are more frequent and this increases the burden of the disease due to handicaps like deafness and language and cognitive skills deficit ^{2,7,8}. Mortality is related to the complications derived from acute otitis media and chronic otitis media ².

Acute otitis media is associated with an important economic burden. An annual expenditure between 3 and 5 billion dollars was calculated for 1996 in the USA, with estimated costs by acute otitis media episode that varied between USD \$108 and USD \$1,330⁹. Nevertheless, indirect acute otitis media costs, which are relevant in this pathology, have been underestimated ³. It has been estimated that acute otitis media patients' caretakers spend between two to 18 hours of their day on each emergency consult and between 1.5 to three hours on ambulatory medical consults. Thus, while direct costs of acute otitis media patients' care vary from USD \$133.74 to USD \$142.14, indirect costs are between USD \$858.26

and USD \$1,526.93, which represents approximately 89.7% of the total costs⁹.

The economic evaluation of sanitary interventions corresponds to the comparative analysis of alternative actions in terms of their costs and consequences¹¹. The cost analysis is the main part of the evaluations and a concern for the evaluators¹². The wide assortment of drugs, the complexity of the diagnostic and therapeutic procedures, the need to restructure the service offer, and the occurrence of a pandemic are examples of the need to evaluate alternatives and analyze costs¹². With progressive incremental sanitary costs¹³, Colombia needs to set up rational intervention measures in the expenditure and the use of cost-effective health technologies. In this scenario, it is relevant to estimate the economic burden of the services or interventions, such as vaccination, which decreases the incidence, and to the handicaps, as well as the economic costs associated to this condition. The two most common types of economic study of the costs of the technologies or sanitary programs in clinical literature are the cost-of- illness studies and the evaluations based on cost-minimization analyses¹⁴.

In spite of its complexity, cost analyses are a central part of the economic evaluation in health¹³. The cost-of-illness studies economically quantify the resources spent in preventing, treating, and managing the disease¹⁵. Additionally, they are important because they estimate the amount of money that would be saved in the absence of the disease, they help to make political decisions in public health, and they are a fundamental input to carry out cost- effectiveness studies^{16,17}.

In the cost-of-illness studies, it is important to specify the perspective that is being analyzed, the most frequent being the costs for society, the health system, and the patient¹⁸. The perspective of society includes all the costs (direct and indirect)¹².

The majority of the studies have focused their research on the costs related to the sanitary system while those centered on the perspective of society have become more important in the last few years because it is a broader approach. In this context, the objective of this study was to estimate the costs of acute otitis media in children from the perspective of the society in a city of the Colombian Caribbean coast.

Materials and methods

We carried out a prospective and partial economic evaluation with a description of the costs according to Dummond¹⁹, where costs were estimated in pediatric patients with signs and/or symptoms of AOM seen in the ambulatory consult in the *Hospital Infantil Napoleón Franco Pareja* in the city of Cartagena. This is a non-profit private institution and the only third level pediatric university hospital in the Colombian Caribbean region.

All patients were assessed by an otorhinolaryngologist who gave the final acute otitis media diagnosis and by means of a survey we collected the socio demographic characteristics of the patients.

The costing was carried out with patients seen between December, 2014, and March, 2015. In this way, we wanted to establish how frequently patients used health services by type, as well as their respective associated costs.

In this study, we estimated both the direct and indirect costs. The former refer to those directly related to the use of resources as a result of treatment and care processes due to the disease. These include the costs of drugs, consults, nursing, hospital stays, procedures, materials and supplies, equipment used during service, and diagnostic exams, among others²⁰. Direct costs also include non-medical direct costs, which are assumed by the patient, especially transport, food, and family care costs, among others, derived from the disease, also called out-of-pocket expenditures²⁰. Additionally, direct costs allow for the measuring of intangible costs, such as pain, insecurity, fear, dissatisfaction, incapacity, and anxiety²¹.

Indirect costs are related to the losses incurred because of the impact of the disease²⁰. While direct costs are associated to the resources of the health systems, indirect costs allow for assessing the time spent by the patients during the disease or loss of profit (transfer, wait, recovery) and are related to the salary and their productivity¹².

There are three perspectives that are generally accepted in economic evaluation studies: The perspective of the health system, the perspective of the patient/family, and the perspective of society. Our study was made from a societal perspective. It is important to specify the perspective of the costing, given the fact that an item can be a cost from one perspective and not be considered as such from another one. For example, the costs of transport of the family of the patient are an assumed cost from the patient's and the society's perspectives, but not from the health system's perspective¹⁹.

To estimate indirect costs in this study, we built a form and applied it (Annex 1.) to the parents or caretakers of the children with acute otitis media to collect the data related to the loss of productivity and out-of-pocket expenses, as well as on their socio- demographic, epidemiological, and economic characteristics.

To estimate the loss of productivity in terms of money, we asked about the income of the breadwinner and the work time lost, which were associated with the disease for each episode of acute otitis media.

The loss of productivity was calculated using the following formula²²:

$$\text{Productivity loss} = \frac{\text{average monthly income}}{30 \text{ days}} \times \text{days with acute otitis media}$$

To calculate the loss of productivity for housewives, we used the minimum legal wage in 2014 (COP \$616,000).

For direct costs derived from medical attention, we took into account the cost of the consult due to the first level emergency room services and at

the Hospital, as well as the cost of being seen by the specialist (pediatrician and otorhinolaryngologist), and the verification of the invoice generated by each of the patients during their stay at the health centers to determine the expenses due to drugs, paraclinical tests, and imaging services.

The costs are presented in Colombian pesos (COP) for 2014, and they were converted to US dollars (USD) based on the average official exchange rate for that year as established by the *Banco de la República* (exchange rate COP \$2,000.33).

Costing information was included in a database to process it using Microsoft Excel. For the descriptive analysis of the costs, we used the average summary measurements and their respective 95% confidence intervals (CI). The economic costs were presented by discriminating the direct costs (direct medical costs and out-of-pocket expenses) and indirect costs (related to the loss of productivity or loss of income).

We used a non-probabilistic convenience sampling applying the survey to all caretakers of the patients. Regarding the ethical considerations of the study, it was approved by the ethics committee of the *Universidad de Cartagena* and the *Hospital Infantil Napoleón Franco Pareja*. Furthermore, we gave information to the parents and/or caretakers about the research and we asked them to give written informed consent. The researchers guaranteed the protection of the anonymity of the participants and the confidentiality of the data. The participants were not submitted to any risks or damage to their physical integrity. We used codes to identify each participant. No data identifying the participants was published or disclosed. This study was classified as risk-free research for the patients, according to Resolution No. 8430 of 1993 from the *Ministerio de Salud*²³.

Results

In total, we analyzed 62 pediatric patients, 59.7% of whom were female. The age mean was 16.0 months \pm (SD=13.5); 90% of patients came from urban areas, and 44 (70.9%) of the 62 mothers were housewives. Regarding the acute otitis media episodes, the majority (95.2%) of the patients reported only one episode. In terms of vaccinations, 79% of the patients had their vaccines up to date when they took the survey, and 4.8% did not report any vaccination data. Table 1 presents the rest of the socio-demographic and epidemiological characteristics of the pediatric patients under study.

Table 1
Socio-demographic and epidemiological characteristics of the study patients

Variables	AOM cases N=62 (%) [95% CI]
Sex	
Female	37 (59.7)
Male	25 (40.3)
Origin	
Urban	57 (91.9) [82.2-97.3]
Age (months)	
Average \pm SD	16.0 \pm 13.5
Median [R1, R3]	12.0 [7.0-24.0]
Breastfeeding time (months)	
Average \pm SD	3.7 \pm 2.1
Median [R1, R3]	4.0 [2.0-6.0]
Breastfeeding position	
Sitting	17 (27.4) [16.9-40.2]
Lying	3 (4.8) [1.0-13.5]
Both	42 (67.7) [54.7-79.1]
Baby bottle	
Yes	41 (66.1) [53.0-77.7]
No	21 (33.9) [22.9-47.0]
Powder Milk	
Yes	44 (71.0) [58.1-81.8]
No	18 (29.0) [18.2-41.9]
Pacifier	
Yes	2 (3.2) [0.4-11.2]
No	60 (96.8) [88.8-99.6]
Exposure to cigarette smoke	
Yes	14 (22.6) [12.9-35.0]
No	48 (77.4) [65.0-87.1]
Sleeps alone	
Yes	3 (4.8) [1.0-13.5]
No	59 (95.2) [86.5-99.0]
Number of people (average \pm SD)	2.27 \pm 1.12
Vaccinations up to date	
Yes	49 (79.0) [66.8-88.3]
No	10 (16.1) [8.0-27.7]
No data	3 (4.8) [1.0-13.5]
Isolated germ	
<i>Neumococcus</i>	6 (9.6) [3.2-15.5]
Non-classified <i>Haemophilus influenzae</i>	5 (8.1) [2.7-17.8]
<i>S. aureus</i>	3 (4.8) [1.0-13.5]
<i>S. pyogenes</i>	2 (3.2) [0.4-11.2]
<i>P. aeruginosa</i>	4 (6.5) [1.8-15.7]
No sample taken	32 (51.6) [38.6-64.5]
Others	10 (16.1) [8.0-27.7]
AOM type	
Bilateral	12 (22.2) [12.0-35.6]
Two episodes	
Yes	3 (4.8) [1.0-13.5]
No	59 (95.2) [86.5-99.0]

AOM: Acute otitis media

The average monthly income of the surveyed caretakers was COP \$743,536(CI95%:COP\$638,958-848,115).Concerning the direct medical costs of the attention, the average per case was COP \$ 225,288(USD \$112.6), from which 70% was due to consults, 21% to laboratory exams and images, and 9% to drugs (table 2, figure 1).

Table 2
Economic costs associated with the health service in pediatric patients with acute otitis media (AOM) in Cartagena, Colombia

Type of cost	Component of the cost	Average cost				Economic burden	
		COP ^a	95% CI	USD ^a	95% CI	COP ^a	USD ^a
Direct costs	Medical consultations	157,272	152,928 – 162,216	78.6	76.2 – 81.1	9,750,860	4,874.6
	Drugs	20,593	6,611 – 34,576	10.3	3.3 – 17.3	1,276,780	638.3
	Exams, procedures and images	47,423	23,863 – 70,982	23.7	11.9 – 35.5	2,940,200	1,469.9
	Direct medical costs	225,288	182,802 – 267,774	112.6	91.4 – 133.9	13,967,840	6,982.8
	Food and other expenses	13,566	5,548 – 21,584	6.8	2.8 – 10.8	841,100	420.5
	Transport	18,698	13,847 – 23,550	9.3	6.9 – 11.8	1,159,300	579.6
	Out-of-pocket	32,265	19,395 – 45,134	16.1	9.7 – 22.6	2,000,400	1,000.0
Indirect costs	Loss of productivity	97,402	52,221 – 142,582	49.0	26.1 – 71.3	6,038,901	3,019.0
Economic cost	Total	354,954	254,418 – 455,490	177.4	127.2 – 227.7	22,007,141	11,001.8

Source: Authors' calculations a COP: Colombian pesos; bUSD: United States dollars

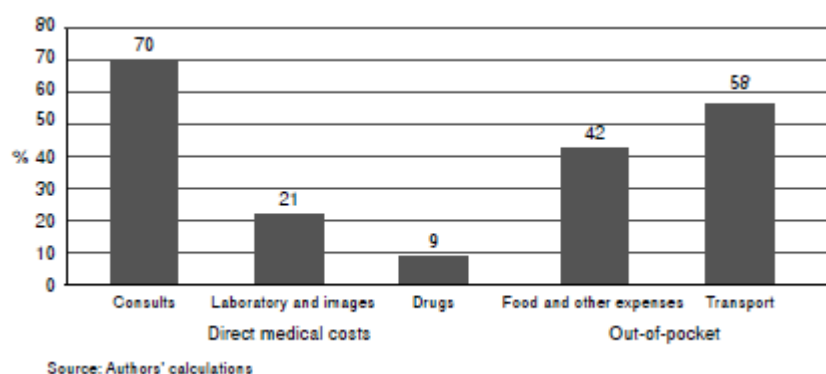


Figure 1
Distribution of the direct costs associated with acute otitis media in pediatric patients

Likewise, non-medical direct costs (out-of-pocket expenses assumed by the acute otitis media patient) were COP \$32,265 (USD \$16.1) on average. From these, the expenses on food/cleaning and transport per pediatric case were COP \$13,566 (USD \$6.8), and COP \$18,698 (USD \$9.3), respectively (table 2). The frequency of patients without out-of-pocket expenses is shown in table 3.

Table 3
Out-of-pocket frequencies of the caretaker or parent of the pediatric patients (n=62)

Out-of-pocket expenses	n (%) [95% CI]
Food	23 (37.1) [25.2-50.3]
Cleaning	15 (24.2) [14.2-36.7]
Own car	1 (1.6) [0.0-8.7]
Bus	15 (24.2) [14.2-36.7]
Bus and own car	1 (1.6) [0.0-8.7]
Bus and motorcycle	1 (1.6) [0.0-8.7]
Bus and other	2 (3.2) [0.4-11.2]
On foot	2 (3.2) [0.4-11.2]
Motorcycle	5 (8.1) [2.7-17.8]
Taxi	25 (40.3) [28.1-53.6]
Taxi and bus	5 (8.1) [2.7-17.8]
Taxi and motorcycle	1 (1.6) [0.0-8.7]
Taxi and other	1 (1.6) [0.0-8.7]
Other	3 (4.8) [1.0-13.5]

Figure 2 shows the average costs of an acute otitis media case by gender and their 95%CI. We did not find any statistically significant differences between the estimated costs for boys and girls($p=0.8122$).

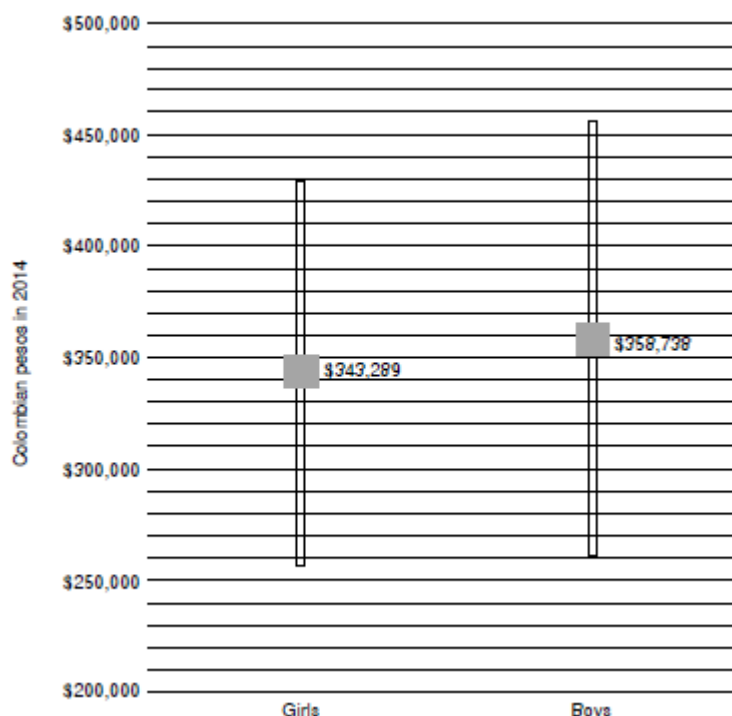


Figure 2

Distribution of the direct costs associated with acute otitis media in pediatric patients

The economic cost (direct medical costs + out-of-pocket expenses + indirect costs) per acute otitis media patient was COP \$354,954 (USD \$177.5), with a 95%CI of COP \$254,419 - COP \$455,490 (table 2). From these costs, 63% were direct attention costs, 9% were pocket expenses, and the rest (28%) were associated with indirect costs.

The economic burden of seeing the 62 patients was COP \$22,007,141 (USD \$11,001.8) in total (table 2).

Discussion

This study estimated the direct and indirect economic costs associated with the attention of pediatric patients with acute otitis media in a third level health service institution in the Colombian Caribbean region. Our findings are among the first approximations in Colombia to the economic study of acute otitis media in children.

Worldwide there have been various studies that have estimated direct and indirect costs, out-of-pocket expenses, and economic burden associated with the attention of acute otitis media patients^{9,24-27}. However, comparing the cited results with our estimations is not recommended given the heterogeneity of the methods employed, the variability of the contexts of the populations, and the different characteristics of the health systems in the countries where the costs were

estimated, which makes them incomparable even if all currencies were converted to international dollars²⁵.

On average, the economic cost of an acute otitis media case was COP \$354,954 (USD \$177.4) and may vary between COP \$254,418 and COP \$455,490. In a prospective cohort study carried out with children between one and three years old in the US, direct costs of the attention represented 10.3% of the total, transport, 2.7%, and work loss, 87.0%, which are higher than our findings⁹.

The estimation of the costs of the disease is an important tool for decision-making, as well as a useful input for performing complete economic evaluations of cost-effectiveness and cost-utility, as it has been done in other countries^{28,29}.

In our study, we took into account expenses due to exams such as cultures, procedures such as myringotomies, and images such as computerized tomographies, which in spite of not being prerequisites for the diagnosis of acute otitis media were ordered in patients with recurring acute otitis media. Similarly, we found that some patients had been previously assessed by private non-specialist physicians who ordered exams and diagnostic tests that were unnecessary for the diagnosis of the pathology. For this reason, we also collected information on these in the survey and we classified them as out-of-pocket expenses. This explains why we observed an elevated percentage of expenses for laboratory tests and images.

One of the strengths of this study was that it assessed the costs from a societal perspective. As suggested by Boonacker, *et al.* in their systematic review⁽³⁾, to avoid underestimating the costs he highlights the importance of estimating the costs related to the loss of productivity or loss of profit, and the out-of-pocket expenses of the family, which for this research, were 37% of the total cost of an acute otitis media case.

Additionally, the exhaustive micro-costing analysis of the disease and the use of methodological techniques of economic and epidemiological analyses contributed to the soundness of four conclusions. On the other hand, the lack of studies that estimate economic costs of otitis media in countries with mid-low and mid-high incomes generates short-term research challenges that should be considered by the decision-makers, public policy makers, and national and international cooperation organisms in health or economics because such a frequent disease as acute otitis media and its related pathologies should be studied in developing countries not only from an epidemiological point of view but also from an economic and social perspective.

However, the study has limitations that must be considered when generalizing its results. The main one is related to the potential memory bias that is present in studies with this design but asking parents and caretakers about expenses related with the disease at the time of consultation at the emergency room could be considered a good approach for estimating the cost associated with the disease. Another limitation arises from evaluating a series of cases that were not probabilistically

selected of patients enrolled at the emergency consult in only one health center receiving patients belonging mainly to low socioeconomic strata.

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Anexo

Anexo 1

Survey to evaluate indirect costs (loss of productiveness and/or out-of-pocket expenditures) associated with health care due to acute otitis media (AOM).

Country and city			Recollection date			
Initials of the caretaker			Identification No.	Initials of the name and last name of the researcher and number of the history (the same for both questionnaires)		
General Director						
Who is answering the questionnaire	Patient	Father	Mother	Grandparent	Uncle/Aunt	Other
Medical help before admittance to the health center, emergency room, and/or hospital						
How long before admittance at the health center did the symptoms begin?				_____ Days		
Before admittance to the health center, did you receive any kind of help?		Yes () No () What kind? _____				
Did you pay with your own money for drugs or any kind of service before admittance and/or hospitalization at the health center? Yes () No ()		If you paid for any service, please indicate which and how much you spent.				
		Type of service			How much did you pay?	
		Drugs				
		Medical consultation				
		Laboratory exams				
		X-rays or images				
Procedures						
Transportation expenses						
What means of transportation did you use to go to the health center, emergency room, and/or hospital? Indicate with an X. Then, write how much you spend (local currency) for your transfer to the emergency room or hospital due to AOM.	To		From			
	Means	Cost	Means	Cost		
	Bus		Bus			
	Taxi		Taxi			
	Car		Car			
	Ambulance		Ambulance			
	Onfoot		Onfoot			
Other		Other				
Medical attention expenditures at the health center, emergency room, and/or hospital						
Did you pay from your own pocket for any kind of service during the consult at the health center, emergency room, and/or hospital for the management of AOM?	Indicate the amount of money you spent (in local currency)					
	Type of service				How much did you pay?	
	Health center	Medical consult	Yes	No		
		Exams (laboratory)	Yes	No		
		X-rays or images	Yes	No		
		Drugs	Yes	No		
		Procedures	Yes	No		
	Emergency room	Emergency consult	Yes	No		
		Exams (laboratory)	Yes	No		

Anexo 1, continuation

Survey to evaluate indirect costs (loss of productiveness and/or out-of-pocket expenditures) associated with health care due to acute otitis media (AOM).

Medical attention expenditures at the health center, emergency room, and/or hospital							
		X-rays or other images	Yes	No			
		Drugs	Yes	No			
		Procedures	Yes	No			
	Hospitalization	Admittance to hospitalization	Yes	No			
		Exams	Yes	No			
		(laboratory)	Yes	No			
		X-rays or other images	Yes	No			
		Drugs	Yes	No			
		Procedures	Yes	No			
Loss of work/other activities							
Who cared for you or the patient during the health service?	Indicate how much time (in hours/days) you or a family member was cared for and the expenses						
	Family member	Hours	Days	Occupation	Income		
	Mother				\$	Monthly	Daily
	Father				\$	Monthly	Daily
	Another family member 1: _____				\$	Monthly	Daily
	Another family member 2: _____				\$	Monthly	Daily
	Another family member 3: _____				\$	Monthly	Daily
If you or the family member had not received medical attention due to the AOM, how would you have spent the time?	Activity			Mark with an "X"			
	Doing paid work						
	Doing voluntary work						
	Doing household activities						
	Studying						
	Another activity						
Activity	How much time have you stopped working or doing another activity?			How much money (in the local currency) have you not earned due to AOM?			
During the health service or hospitalization				\$			
After the health service or hospitalization				\$			
During the health service or hospitalization, how much did the additional expenses (in the local currency) of being sick with AOM represent for you or the patient in:	Category			Cost			
	Transport						
	Food						
	Drugs						
	Others: (which?) _____						

Anexo 1, continuation

Survey to evaluate indirect costs (loss of productiveness and/or out-of-pocket expenditures) associated with health care due to acute otitis media (AOM).

Other expenses						
Did you have to pay someone to care for the family while you or the family member recovered from AOM? Indicate with an "X". Yes () No ()	Indicate how much you paid them (in the local currency) and for how many hours and days					
	Hours		Days		Cost (local currency)	
Where did the money come from to cover the medical expenses or other costs associated with AOM?	Form of payment			Mark with an "X"		
	Spending less on other things					
	Savings					
	Borrowed money					
	Selling something					
	Asking for donations					
Other (which?)						
Data of the informer						
Is the informer the head of the family?	Yes () No ()		Do they have health insurance?		Yes () No ()	
If they have health insurance, which one?	Public		Special regime	Social security	Private	
Education level	Studies			Mark with an "X"		
	None					
	Incomplete primary school					
	Primary school					
	Incomplete secondary school					
	Secondary school					
	Technician					
	Incomplete university career					
	University graduate					
What is your effectively perceived income from wage, salary, hourly payment, tips, overtime?	Family member	Less than the minimum wage	Between one and two minimum wages	Between two and three minimum wages	Between three and four minimum wages	More than four minimum wages
	Mother					
	Father					
	Family member					
	Other 1: Which: _____					
	Other 2: Which: _____					
Other 3: Which: _____						
What is your estimated monthly expenditure?			\$ _____			
What proportion of the expenditure is destined to health goods and services?			\$ _____ % _____			

Notes

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Conflict of interest declaration

Conflict of
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None