

How were situations of preventive and curative care expenditure for AIDS and medical burden of patients? Research based on "System of Health Accounts 2011 "

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Abstract

Background The problem of AIDS response has not only involved public health, but also had a great impact on the family burden. The objective of this study was to estimate Hunan Province preventive and curative care expenditure (PCE) of AIDS in 2017 based on System of Health Accounts 2011 by quantity, financing scheme, health provider, health function, and to analyse the factors affecting patients' medical burden.

Methods Through stratified multi-stage sampling method, 1336 institutions were surveyed to obtain AIDS prevention and control data, and combined with official data of Hunan Health Statistical Yearbook, Health Financial Yearbook and Government Input Monitoring System to estimate the AIDS PCE under the framework of SHA2011. Univariate analysis and ordered logistic regression were used to evaluate the factors affecting the medical burden of AIDS patients.

Results The AIDS PCE of Hunan in 2017 was 266.67 million, mainly flowed to hospitals and disease prevention and control institutions. The proportions of curative care expenditure (CCE) and prevention expenditure were 51.39%, 48.61% respectively. From the point of view of the allocation of prevention expenditure, AIDS prevention methods were relatively traditional, and oral PrEP was not included in the national plan. All prevention expenditure and 88.52% of CCE were borne by public financing scheme. Family health expenditure accounted for 11.21% of CCE. None insurance, co-infection and length of stay are risk factors to the total expenditure of hospitalization and out-of-pocket health expenditure (all $p < 0.05$, $OR > 1$). Taking the age group under 30 as the reference, the partial regression coefficient of the age group over 60 was statistically significant ($OR (Total\ exp) = 1.809$, $OR (OOP) = 0.30$).

Conclusions The financing structure of the Hunan Province PCE of AIDS was relatively stable and the flow of institutions was reasonable. The functional flow of expenditure embodied the principle of "prevention first". China should incorporate oral PrEP into the national guidelines as soon as possible to improve the allocation efficiency of AIDS prevention resources. Meantime, several measures should be taken to reduce the hospitalization expenses and medical burden of AIDS patients, including adjusting insurance compensation measures, increasing the rate of patients participating in insurance, encouraging commercial insurance to join the AIDS insurance system, and controlling length of stay in hospital.

Background

AIDS is a malignant infectious disease caused by the human immunodeficiency virus (HIV). Up to now, about 37 million people are living with HIV all over the world [1]. In China, the number of AIDS cases has reached 850,000. According to the statutory death report of infectious diseases in China in 2017, 77.16% died of AIDS [2]. The problem of AIDS preventive and curative care has not only involved public health, but also had a great impact on the family burden. AIDS affects the health and wealth of households as well as infected individuals, aggravating pre-existing poverty [3]. It is of great significance to study the collection and management of preventive and curative care expenditure (PCE) of AIDS for evaluating the rational allocation of AIDS resources.

Some countries established National AIDS Account (NAA) by using the policy analysis framework of the National Health Accounts (NHA) [4]. NAA model can be used to analyze the financing sources, institutional flows and functional allocation of preventive and curative care expenditure (PCE) for AIDS [5], and provide valuable information for improving the financing and allocation of AIDS resources [6]. In 1999, data on the use of HIV services collected in Rwanda under the framework of NNA showed that 93% of funds were provided by households, about 6% by donors and less than 1% by the government [7]. The results of NNA application in Thailand shown that 81% of the funds come from public financing, the proportion of households pay only about 2% in 2003. Most of the spending was emphasized on care and treatment with a smaller proportion in prevention activities [8].

In addition, the Joint United Nations Programme on HIV and AIDS (UNAIDS) exploited and initiated the National AIDS Spending Assessment (NASA) in 2006 to track actual expenditure on national or regional AIDS resources. A number of NASA-based studies have found that countries spend the most on prevention, with China, Nepal, and Sierra Leone accounting for 54.31%, 46%, and 61% respectively [9][10].

Whether based on NAA or NASA, we can calculate the financing structure and flow direction of AIDS prevention and control fund, but we can not specify the individual burden of different groups of AIDS patients. This study conducts subnational preventive and curative care expenditure (PCE) for AIDS based on the System of Health Accounts 2011 (SHA2011). It can not only better explain the quantity, financing scheme, health provider, health function of PCE by the matrix cross analysis, but also subdivide the curative care expenditure (CCE) by age to reflect the health expenditure burden of different groups. what's more, we also intend to find out the influence factors of AIDS patients' treatment burden by analyse survey data.

Methods

Data source

The basic data used in this study were from the current health expenditure research project in Hunan Province, China. Data were divided into two categories. A class of data came from official statistic of Health Commission of Hunan province, such as *2017 Hunan Health Statistics Yearbook*, *2017 Hunan Health Financial Yearbook*, Government Input Monitoring Data of Hunan Province in 2017, etc. The other kind was derived from the sample institutions.

Study sample

This study used multi-stage stratified sampling method to determine the sample institutions. In the first stage, Changsha, Yueyang, Zhuzhou, Yongzhou and Hengyang were selected as the municipal level sample areas after comprehensive consideration of the economic development level, demographic characteristics, medical and health conditions, cultural differences and other factors. The second stage was to select one district and three counties from the monitoring cities. The third stage was to choose medical and public health institutions in the monitoring areas at all levels according to the type of institutions of administrations structure. The sample data were obtained from 76 hospitals, 28 public health institutions, 36 community health service centers, 102 township hospitals, 720 village clinics and 168 private clinics.

The survey data included the income and expenditure of AIDS prevention and treatment services carried out by the sample institutions throughout 2017. Preventive data are obtained by contacting sample institutions to fill out questionnaires, involving the information of human input, income, expenditure and special subsidy for AIDS prevention. The data of curative care were derived from the information system of the sample institutions, involving age, gender, disease, length of stay, total and detailed costs of treatment, types of insurance coverage, insurance reimbursement, and out-of-pocket expenditure of patients, but did not contain any information that may infer personal identity. In this study, there were 10335678 pieces of information about curative care expenditure after excluding the invalid or wrong message, including 1018 pieces of AIDS treatment. The sample of AIDS data involved 196 outpatients, 822 inpatients, distributed in all ages from 0 to 85 years old, including 770 male patients and 248 female patients.

Statistical method

Data were recorded and sorted with SPSS 17.0 and STATA 12.0 were used to calculate the PCE for AIDS.

Calculation of AIDS preventive and curative care expenditure

The PCE of AIDS based on SHA2011 framework refers to the monetary performance of residents' AIDS prevention and curative service consumption consumed by a country (region) in a certain period (usually one year), excluding capital investment such as fixed assets construction. The preventive care is limited to primary and secondary prevention in SHA 2011, so the expense of using antiretroviral drugs for HIV-infected people is excluded in prevention expenditure, but it is included in the CCE in our study. The formula for calculating the PEC of AIDS can be found in the report of "A System of Health Accounts 2011 Edition"[11].

Influencing factors of hospitalization expense and out-of-pocket for AIDS patients

Because over 90% of CCE of AIDS was spent on inpatient services. We took the hospitalization expense as the object to study the family treatment cost of AIDS patients in different groups of sex, age, length of stay, insurance plans and condition of opportunistic infection. Due to the innormal distribution of inpatient data, Mann-Whitney U test was performed on the data among the two groups, and Kruskal-Wallis H test was performed on the data between the multiple groups. Spearman correlation analysis was performed the relationship between length of stay and expenditure. According to the results of univariate analysis, indicators were selected for ordered logistic regression analysis to evaluate the factors affecting the total hospitalization expense and out-of-pocket health expenditure, $\alpha = 0.05$.

Results

Fundamental result in preventive and curative care expenditure for AIDS

The preventive and curative care expenditure (PCE) in 2017 for AIDS in Hunan Province was 266.67 million RMB, accounting for 5.29% of the expenditure of infectious disease prevention and treatment.

Functional distribution of PCE for AIDS

From the functional distribution of PCE, 51.39% was used for prevention and 48.61% for treatment. Among the expense of treatment services, 45.24% (58.66 million RMB) were the costs on providing anti-viral drugs for HIV-infected patient free of charge by government. The expenditure of preventive care mainly was applied to education of AIDS prevention, free distribution of condoms, the purchase of HIV testing reagents and HIV testing services, HIV mother-to-child transmission testing, free screening of pregnant women, etc.

Allocation of medical institution in PCE for AIDS

52.56% of the PCE for AIDS occurred in the general hospitals, and 26.47% went to disease prevention and control institutions. Maternal and child health care hospitals occupied 13.00%. Blood collection and supply institutions accounted for 6.52%. With allocation to other facilities costs less than 2.00%. The expenditure of prevention mainly went to the institutions of disease control and prevention (51.52%). Almost all curative care expenditure was in general hospitals (99.64%). (Table 1)

Financing scheme in PCE for AIDS

As shown in table 2, the PCE for AIDS was dominated by public financing scheme, accounting for 94.42%, among which government financing scheme and social health insurance accounted for 84.17% and 10.25% respectively. Family health expenditure accounted for 5.41%. The expenditure of voluntary financing schemes were 460 thousand RMB, rare in total expenditure. In terms of the financing structure of different functional costs, all prevention services and 88.52% of curative care were borne by public financing scheme.

CCE of different age groups

At the end of 2017, there were 13 636 surviving AIDS patients in Hunan Province. According to the calculation, the per capita treatment expenditure of AIDS patients was 8415.22 RMB, which was higher than the treatment expenditure level of the whole population in that year of the areas. Due to the input of governmental AIDS project subsidy for curative care providing, the family health expenditure in the total expenditure of AIDS treatment was not high (20.32%). However, from the perspective of the family treatment cost burden of patients in all age groups, the proportion of family health expenditure of AIDS patients aged 1–19, 30–49 years old were over 30%, and the burden of AIDS patients aged 40–49 years old even exceeded 60%. According to the criteria set out in the World Health Report [12], these people still have the risk of poverty caused by AIDS.

Influence factors of Totalexp and OOP

In order to seek out the factors affecting the family burden of patients, we carried out statistical analysis of 822 inpatients data obtained from our survey. According to the results of nonparametric test (Table 4) and analysis of Spearman correlation (Table 5), excluding gender ($P = 0.547 > 0.05$), the differences of Totalexp among groups of other factors had statistical significance ($P < 0.001$). There was no significant correlation between gender and OOP ($P = 0.288 > 0.05$). Age, length of stay, insurance and opportunistic infection were correlated with OOP, and the differences were statistically significant ($P < 0.001$).

Table 6 and table 7 show the results of ordered logistic regression analysis about Totalexp and OOP. Taking the age group under 30 as the reference, the partial regression coefficient of the age group over 60 was statistically significant, $OR_{(Totalexp)} = 1.809$, $OR_{(OOP)} = 0.30$. It showed that comparing with the age group under 30, the age group over 60 has higher hospitalization costs and lower OOP; Taking self-paying patients as the control group, the partial regression coefficients of urban employee insurance and urban and rural residents groups were statistically significant, $OR_{(Totalexp)} = 0.239/0.158$, $OR_{(OOP)} = 0.001/0.13$, indicating that urban employee insurance and urban and rural residents groups were lower than that of self-paying patients either on Totalexp or OOP. Taking the group of none opportunistic infection as the reference, the partial regression coefficient of the group with opportunistic infection was statistically significant, $OR_{(Totalexp)} = 11.056$, $OR_{(OOP)} = 75.49$. The partial regression coefficient of length of stays was statistically significant, $OR_{(Totalexp)} = 1.41$, $OR_{(OOP)} = 1.06$.

Discussion

There is no generally accepted measure of the scale of the cost of AIDS prevention and treatment. In the international community, the PCE of AIDS is often discussed from the perspective of financing structure. In recent years, China has been increasing investment in its AIDS/HIV response. In 2017, China's fiscal expenditure was almost 7 billion RMB on its AIDS/HIV response, an increase of more than 5.4% from 2016[13]. Take Hunan as an example, 94.42% of the PCE of AIDS came from the central government and local governments. It shows that the government plays an important role in the prevention and treatment of AIDS. Compared with some countries and regions that need to rely on social donations, China's funding for AIDS/HIV response is more stable. According to the Regulations on the Prevention and Control of Infectious Diseases of China, AIDS prevention services are mainly provided by public health institutions, while treatment services are provided by medical institutions. Our results shown that prevention costs mainly go to public health institutions, and treatment costs almost all go to hospitals. It can be seen that the institutional allocation of AIDS prevention and control costs is reasonable.

From the perspective of functional flow of expenditure, AIDS expenditure allocation displayed the characteristics of preventive expenditure more than cure. This result was consistent with the research of Li based on NASA [9]. It also demonstrated that the work of AIDS control in Hunan Province conforms to the principle of "prevention first" that the World Health Organization and China have always adhered to[14]. With regard to HIV prevention. However, from the perspective of the use of the preventive expenditure, AIDS prevention in China is still taking a more conservative way, and some advanced prevention technologies such as the use of oral pre-exposure prophylaxis (PrEP) for HIV high-risk groups have not yet been applied. The 2015 world health organization report shown that clinical trials in Africa, Asia, Europe, South America and the United States have demonstrated that oral PrEP has a high-quality inhibitory effect on the occurrence of HIV infection[15]. Drawing on international experience, it is suggested to integrate traditional and advanced methods to improve the effectiveness of AIDS prevention by adjusting the allocation of the expenditure of AIDS prevention.

Concerning the patient's treatment cost, the result of ordered logistic regression showed that none insurance, co-infection and length of stay are risk factors. Si Cunwu's research found that by using different payment methods of medical insurance, medical insurance can play a role in controlling the increase of costs for the suppliers and needs of AIDS treatment. Patients who have not moved to medical insurance are not only lack of awareness of cost estimation, but also medical institutions are more likely to have excessive medical practices[16]. It can be seen that incorporating uninsured patients into social basic insurance schemes is the most direct way to reduce the OOP of patients. Moreover, commercial medical insurance can be encouraged to join the AIDS medical insurance system. With the abundant actuarial data of insurance, we can estimate the risk of infection of high-risk groups and the general population, and integrate AIDS into commercial insurance by adjusting insurance costs. In this way, once people are infected with AIDS, commercial insurance can be used to share the burden of medical treatment.

Because of the damage of HIV to human immune system, AIDS patients are more vulnerable to pathogens with weaker virulence than ordinary people. The resulting infectious diseases are called opportunistic infections of AIDS[17]. Many researches shown that with the emergence of opportunistic infection, it is not only difficult to treat, but also significantly increased in cost[18][19]. With regard to the medical security of AIDS opportunistic infections patients, China has introduced a series of measures, including the inclusion of opportunistic infections treatment drugs in the list of essential medicines and the inclusion of AIDS opportunistic infections in the coverage of major diseases in the New Rural Cooperative Medical System. But according to relevant policies, only part of the cost of treatment for opportunistic infections can be reimbursed. In additional, patients with opportunistic infections have higher treatment costs, but the reimbursement rate and capping line have not been adjusted. Therefore, in order to reduce the burden of AIDS patients with co-infection, the government should consider adjusting the coverage and proportion of insurance reimbursement appropriately.

With regard to the influence of hospitalization days, Xie's study found "the longer the length of hospitalization, the higher the cost of hospitalization"[20]. It is accordant with our study. Hospitals should control unnecessary large-scale instrument examination under the premise of ensuring medical quality, reduce or eliminate invalid examination items, so as to shorten hospitalization days and alleviate the economic burden of patients. At the same time, clinicians should identify the causes as early as possible, diagnose and treat early, and avoid prolonging hospitalization time due to examination or diagnosis. On the other hand, psychological counseling should be strengthened to avoid the fear caused by the lack of knowledge of AIDS and reduce the avoidable cost of hospitalization due to fear.

Regarding the expenditure of different age groups, our statistical analysis results show that the hospitalization expenses of group over 60 are higher than those of group under 30. There may be many reasons for this. First, the awareness of AIDS and AIDS testing routes among the elderly is relatively low[21]. A family survey data shown that people over 50 years old were less likely to have been tested for HIV than those aged 15–49[22]. Infection cannot be detected in time unless there are clinical symptoms of AIDS. Once clinical symptoms

arise, treatment becomes more difficult and costly. Secondly, elderly AIDS patients are the most at risk for comorbidity[23]. The research of Negin found that the rates of chronic disease were higher among all older adults compared with those aged 18–49. Of those aged 50 years and older, 29.6% had two or more of the seven chronic conditions compared with 8.8% of those aged 18–49 years[24]. Third, with the growth of age, the immunity of AIDS patients gradually declined, and patients are likely to have co-infection. What's more, the increasing complexity of patients' illness necessitates more hospital stay. These may lead to an increase in the cost of treatment for elderly AIDS patients. As for out-of-pocket health expenditure, people over 60 years old are less than people under 30 years old, which may be the impact of medical insurance compensation and medical assistance policy. According to the study of Xu [25], the proportion of AIDS patients under 40 years of age participating in medical insurance in China is significantly lower than that of people over 60 years of age. From the perspective of medical aid policy, the elderly with no fixed income and no working ability can meet the requirements of applying for medical assistance. So their OOP is significantly lower than that of other groups.

To our knowledge, this study is the first one to give a comprehensive report about expenditures of AIDS in China at the subnational level based on SHA2011. The study not only calculates the scale and flowing of recurrent AIDS prevention and control costs from macro perspective, but also carries out statistical analysis on the factors affecting the medical burden of AIDS patients from micro perspective. But, it is undeniable that the study has two part of limitations. Compared with the actual situation, the AIDS preventive expenditure based on the SHA2011 framework could be underestimated, because the cost of buying condoms at patients' own expense was not taken into account. In addition, in the calculation of CCE, we only considered direct medical expenses, indirect expenses (such as transportation fee and charge for loss of working time for medical treatment) were not included. So our calculation of OOP could not fully reflect the actual economic burden of AIDS patients' families.

Conclusions

The accounting of PCE for AIDS based on SHA2011 can not only reveal the overall situation of AIDS prevention and treatment costs, but also analyze the financing burden of different groups. The PCE for AIDS in Hunan was 266.67 million in 2017, mainly used for prevention. The financing structure was stable and the flow of institutions was reasonable. From the medical burden of different groups of people, there were still some groups with the risk of poverty caused by AIDS treatment. Combined with the results of ordered logistic regression analysis, it is suggested that the burden of AIDS patients be reduced by optimizing the allocation of prevention costs to increase investment in efficient prevention methods, adjusting insurance compensation measures, increasing the rate of patients participating in social basic insurance, and controlling length of stay in hospital. Moreover, commercial medical insurance can be encouraged to join the AIDS medical insurance system to share the patients' burden of medical treatment.

List Of Abbreviations

PCE: Preventive and curative care expenditure;

CCE: Curative care expenditure;

OOP: out-of-pocket health expenditure ;

SHA 2011: System of Health Accounts 2011

Totalexp: the total hospitalization expenses

Declarations

Ethics approval and consent to participate

All the participants agreed our investigation request and each participant signed on the consents, which was recorded and kept properly by Health Commission of Hunan Province and Ethics Committee of Hunan university of traditional Chinese medicine.

Consent for publication

All of the data is allowed by patients and medical institutions.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

HZ drafted the manuscript and performed the statistical analysis.QW did some data processing. SZ did some expeditionary research.RLZ,XW helped revise the manuscript.All authors read and approved the final manuscript.

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Tables

Table 1 Allocation of medical institution in PCE for AIDS

	The total Expenditure		Preventive care expenditure		Curative care expenditure	
	(million)	%	(million)	%	(million)	%
General hospital	140.15	52.56	10.98	7.84	129.17	92.16
Special hospital	0.42	0.16	0.08	18.68	0.34	81.32
Traditional Chinese medicine hospital	0.90	0.34	0.77	85.57	0.13	14.43
Maternity and child care hospital	34.66	13.00	34.66	100.00	0.00	0.00
Primary medical institutions	0.40	0.15	0.40	100.00	0.00	0.00
Disease prevention and control institutions	70.59	26.47	70.59	100.00	0.00	0.00
Blood collection and supply institutions	17.40	6.52	17.40	100.00	0.00	0.00
Rehab	0.14	0.05	0.14	100.00	0.00	0.00
Health supervision office	0.07	0.02	0.07	100.00	0.00	0.00
Administrative units	1.95	0.73	1.95	100.00	0.00	0.00
Total	266.67	100.00	137.03	51.39	129.64	48.61

Table 2 The composition of financing programs for HIV/AIDS in 2017

	The total Expenditure		Preventive care expenditure		Curative care expenditure	
	million	%	million	%	million	%
Public financing scheme	251.78	94.42	137.03	100.00	114.75	88.52
Government financing scheme	224.44	84.17	137.03	100.00	87.41	67.43
Social health insurance	27.34	10.25	0.00	0.00	27.34	21.09
Mandatory medical savings account	0.46	0.17	0.00	0.00	0.46	0.35
Family health expenditure	14.42	5.41	0.00	0.00	14.42	11.12
Total	266.66	100.00	137.03	100.00	129.63	100.00

Table 3 CCE of different age groups (%)

Age groups	Public financing scheme			Mandatory medical savings account	Family health expenditure
	Total	Government financing scheme	Social health insurance		
1-9	64.06	8.99	55.08	0.00	35.94
10-19	52.83	5.86	46.97	0.14	47.03
20-29	72.19	72.19	0.00	0.07	27.74
30-39	50.67	23.72	26.95	0.90	48.43
40-49	38.89	11.12	27.77	0.99	60.12
50-59	83.82	38.22	45.60	0.94	15.24
60-69	89.15	41.84	47.31	0.94	9.91
70-79	90.69	52.28	38.42	0.00	9.31
80+	88.78	53.31	35.46	0.00	11.22

Table 4 Univariate analysis of influence on total expenses of hospitalization and Out-of-pocket health expenditure (OOP) of AIDS patients

† Mann-Whitney U of Mann-Whitney U test

□ Chi-Square of Kruskal-Wallis H test

* p-value of Mann-Whitney U test

** p-value of Kruskal-Wallis H test

Note: 346 patients in the survey received medical assistance from the government in addition to insurance reimbursement, and their OOP was 0. Among them, 95 patients were insured by urban workers' insurance and 251 were insured by urban and rural residents' insurance.

Table 5 Spearman correlation analysis of length of stay between total expenses of hospitalization and Out-of-pocket health expenditure (OOP) of AIDS patients

	Total expenses of hospitalization (RMB)		Out-of-pocket health expenditure (RMB)	
	r	p	r	p
Length of stay	0.65	<0.001	0.213	<0.001

Table 6 Ordered logistic regression analysis affecting the total hospitalization expenses (Totalexp)

Variable	N=822	Total expenses of hospitalization(RMB)			Out-of-pocket health expenditure (RMB)		
		Median(P ₂₅ , P ₇₅)	U / H	P	Median(P ₂₅ , P ₇₅)	U / H	P
Sex							
Female	177	4542.32(3749.02, 5816.17)	55397.00 [†]	0.547*	1103.56(0.00,1592.27)	54224.00 [†]	0.288*
Male	645	4639.03(3747.16,5868.86)			1010.04(0.00,1476.34)		
Age							
<30 years	31	4838.83(3307.98 , 16946.80)	10.22 [‡]	0.037**	1522.91(621.98,16946.90)	69.92 [‡]	<0.001**
31-40years	71	4155.90 (2932.93, 7905.78)			1294.06 (0.00 ,3934.60)		
41-50years	168	4494.78 (3613.57 ,6791.47)			1183.07(0.00 ,3358.10)		
51-60years	158	4430.08 (3576.15, 5253.15)			1174.54(0.00 ,1512.47)		
>60 years	396	4773.16 (4000.53,5648.70)			0.00(0.00 ,1324.345)		
Insurance							
Urban employee insurance	123	4460.77 [‡] 3608.78 [‡] 5255.86 [‡]	114.53 [‡]	<0.001**		238.91 [‡]	<0.001**
Insurance for urban and rural residents	626	4537.26 [‡] 3725.67 [‡] 5478.605 [‡]			0.00(0.00 ,0.00)		
Self-paying	73	24524.5(11666.15,28056.65)			24524.5(11666.15,28056.65)		
Opportunistic infection							
No	730	4498.83(3696.45,5367.01)	7983.00 [†]	<0.001*	740.24 (0.00 ,1367.60)	1835.50 [†]	<0.001*
Yes	92	22704.65(8787.97,27747.97)			21867.65 (4734.08 ,27670.20)		

	b	S _b	Wald c [‡]	P	OR	OR 95% CI
Age						
>60 years	0.903	0.418	4.677	0.031	2.467	1.089 5.596
51-60years	0.343	0.426	0.65	0.42	1.409	0.612 3.245
41-50years	0.018	0.427	0.002	0.966	1.018	0.440 2.354
31-40years	-0.46	0.48	0.918	0.338	0.631	0.247 1.618
<30 years					1	
Insurance						
Urban employee insurance	-1.43	0.577	6.148	0.013	0.239	0.077 0.741
Insurance for urban and rural residents	-1.846	0.563	10.769	0.001	0.158	0.052 0.475
Self-paying					1	
Opportunistic infection						
No					1	
Yes	2.403	0.429	31.42	<0.001	11.056	4.773 25.636
Length of stay						
	0.342	0.025	192.423	<0.001	1.41	1.34 1.48

Table 7 Ordered logistic regression analysis affecting the out-of-pocket health expenditure (OOP) of AIDS patients

	<i>b</i>	<i>S_b</i>	Wald <i>c²</i>	<i>P</i>	<i>OR</i>	<i>OR 95% CI</i>	
Age							
>60 years	-1.214	0.427	8.072	0.004	0.30	0.13	0.69
51-60years	-0.513	0.437	1.38	0.24	0.60	0.25	1.41
41-50years	-0.031	0.444	0.005	0.944	0.97	0.41	2.31
31-40years	-0.069	0.501	0.019	0.891	0.93	0.35	2.49
<30 years					1		
Insurance							
Urban employee insurance	-4.702	0.864	29.627	<0.001	0.01	0.00	0.05
Insurance for urban and rural residents	-2.044	0.834	6.008	0.014	0.13	0.03	0.66
Self-paying					1		
Opportunistic infection							
No					1		
Yes	4.324	0.686	39.75	<0.001	75.49	19.69	289.74
Length of stay							
	0.055	0.017	9.966	0.002	1.06	1.02	1.09