

Giving birth at a health-care facility in rural China: is it affordable for the poor?

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Objective To investigate changes in the expenditure of giving birth in health-care facilities in rural China during 1998–2007, to examine the financial burden on households, particularly poor ones, and to identify factors associated with out-of-pocket expenditure.

Methods Cross-sectional data on births between 1998 and 2007 were obtained from national household surveys conducted in 2003 and 2008. Descriptive statistics and log-linear models were used to identify factors associated with out-of-pocket expenditure on delivery.

Findings During 1998–2007, the proportion of facility-based deliveries increased from 55% to 90%. In 2007, 60% of births occurred at county-level or higher-level facilities. The Caesarean delivery rate increased from 6% to 26%. Total expenditure on a facility-based delivery increased by 152%, with a marked rise from 2002 onwards with the introduction of the New Cooperative Medical Scheme. In 2007, out-of-pocket expenditure on a facility-based delivery equalled 13% of the mean annual household income for low-income households. This proportion had decreased from 18% in 2002 and differences between income groups had narrowed. Regression models showed that Caesarean delivery and delivery at a higher-level facility were associated with higher expenditure in 2007. The New Cooperative Medical Scheme was associated with lower out-of-pocket expenditure on Caesarean delivery but not on vaginal delivery.

Conclusion Expenditure on facility-based delivery greatly increased in rural China over 1998–2007 because of greater use of higher-level facilities, more Caesarean deliveries and the introduction of the New Cooperative Medical Scheme. The financial burden on the rural poor remained high.

Abstracts in عربي, 中文, Français, Русский and Español at the end of each article.

Introduction

In China, the number of women giving birth at a health-care facility is used as a target indicator for measuring progress towards improved maternal health.¹ The proportion of deliveries attended in health-care facilities varies across geographical areas and according to family wealth: in 2003, about 94% of urban women in China gave birth at a health-care facility. This is 1.4 times the proportion in an average rural area and 3 times that in poor rural areas.² In addition, giving birth at a health-care facility was four times more common among the richest 20% of women than among the poorest 20% (Z Wu, unpublished data, personal archive, 2010).

A limited ability to pay and high hospital costs have been identified as the major barriers for the rural poor wishing to access health care in China.³ Following the demise of the rural Cooperative Medical Scheme in the 1980s, which occurred with the marketization of the rural economy, large sections of the rural population were left without health insurance cover.⁴ In addition, China's health-care system was decentralized in the 1980s and the central budget dropped to 10% of total expenditure.^{5,6} Health-care facilities now rely on user fees to cover their running costs and the result has been a rapid increase in medical costs.³

Data from the Chinese Ministry of Health show that fee-for-service income accounted for 82% of the total revenue of maternal health-care institutions in rural China in 2002.⁷ Delivery is the most costly part of maternal care, and expenditure can

be especially high for emergency obstetric care.⁸ Unexpectedly high expenditure on a delivery can push a family into poverty.

In 2003, a new rural health insurance programme, the New Cooperative Medical Scheme, was introduced with the aim of reducing the risk that health-care costs could become catastrophic for some individuals. The scheme operates on a voluntary basis and uses funds pooled from central and local government and from individual contributions.⁴ The county (typical population: 0.5–1 million) forms the administrative unit of the scheme and the risks associated with illness are shared across the unit. The county government can decide the content, coverage and reimbursement model most appropriate for local conditions, although the Chinese Ministry of Health is responsible for developing overall strategies and policies. In 2008, 92% of the rural population were enrolled in the New Cooperative Medical Scheme.⁹

The New Cooperative Medical Scheme includes a maternal care benefit package that differs in design and implementation across counties. Usually this package provides reimbursement for delivery at a health-care facility, either as a fixed proportion of expenditure or as a fixed payment. Reimbursement may be the same or different for vaginal and Caesarean delivery.

The aims of this study were to investigate changes in expenditure on facility-based delivery in rural China between 1998 and 2007, to examine the financial burden on households, in particular on poor households, and to identify factors associated with out-of-pocket expenditure on facility-based delivery.

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Methods

The study was based on cross-sectional data from national household health service surveys conducted in 2003 and 2008 by the Centre for Health Statistics and Information of the Chinese Ministry of Health. For our analysis, only the rural component of the data set was used. Both surveys employed the same four-stage, stratified, random sampling procedure involving counties, townships, villages and households. Ten indicators of socio-economic development were used to classify each county's level of development as being in one of four categories: developed, relatively developed, less developed or poor. The probability proportional sampling method was used to randomly select counties for each development category; then, five townships were selected from each county and two villages from each township. Finally, 60 households were selected from each village. In total, 40 212 rural households were surveyed in 2003 and 39 654 were surveyed in 2008.

Data collection

The health service surveys involved trained township health-care workers carrying out interviews in the selected rural households using structured questionnaires. Each family member answered the questions individually. If one family member was not at home at the time of the survey, another answered the questions on his or her behalf. The questionnaires used in the two surveys had a similar structure and involved similar questions. The 2008 survey included questions about participation in the New Cooperative Medical Scheme and any reimbursement received. The questionnaires were divided into several sections covering: the general demographic and socioeconomic background of the sampled households and family members; the perceived need and demand for health care; and the utilization of and expenditure on health services. The questionnaire included a section on the births that occurred within the 5 years before the survey and these births, which took place between 1998 and 2007, were considered in this study.

Data analysis

The study examined total expenditure on delivery (i.e. reported medical expenditure) within or outside a health-care facility and according to the mode of delivery (i.e. vaginal or Caesarean). In the

questionnaires, vaginal delivery included normal vertex delivery and delivery by forceps or vacuum extraction. Facility-based delivery was defined as a birth attended at a health-care facility at a township or higher level. Births outside health-care facilities included delivery at home, in a village clinic or on the way to a health-care facility. Out-of-pocket expenditure on facility-based delivery was calculated as the total expenditure on the delivery minus any reimbursement reported by the women. Out-of-pocket expenditure was used as the main indicator for evaluating the financial burden on households.

The study also investigated the relationship between out-of-pocket expenditure and the following factors: maternal age; maternal educational level (i.e. illiterate, primary school, secondary school, high school or higher); health insurance cover; income category; parity, defined as the number of live births borne by a woman; and the location of the health-care facility (i.e. at a township, county or higher level). In China, education at secondary schools generally continued to the age of 15 years, while education at high schools continued to 17 years. Annual household income in the calendar year that preceded the survey year also included household expenditure on consumables and any savings made during that year. A household's income category was derived by dividing household income by the number of individuals in the household and using the figure obtained to allocate the household to one of three categories: low-, medium- or high-income. Each category contained one-third of all households.

To help identify changes in the women's demographic and socioeconomic characteristics, the time period 1998–2007 was divided into four parts: 1998–1999, 2000–2002, 2003–2005 and 2006–2007. The χ^2 test was used to check for significant differences. The mean values of expenditure on all deliveries and, separately, on vaginal and Caesarean deliveries were compared between the two survey periods using the *t*-test. Out-of-pocket expenditure on delivery as a percentage of annual household income in 2002 and 2007 was calculated for the three income categories. Expenditure on delivery for all years from 1998 to 2006 was adjusted in line with the annual consumer price index to correct for inflation. Finally, linear regression models were used to study factors associated with

out-of-pocket expenditure on delivery at a health-care facility in 2007 by taking the natural logarithm of the observed expenditure. Expenditure was converted into United States dollars (US\$) from Chinese yuan using the 2007 exchange rate of 7.4 yuan to the US\$. Data were analysed using SAS version 9.1 statistical software (SAS Institute Inc., Cary, United States of America).

Results

The number of women who gave birth in the time periods covered by the two surveys and their demographic and socioeconomic characteristics are listed in Table 1. The age and parity distributions were relatively similar in the four time periods considered. On average, the women's educational level increased over time ($P < 0.01$). In addition, a substantial increase in the proportion of women with health insurance was observed in the time period 2003–2005. The great majority of those with insurance (i.e. 98%) had enrolled in the New Cooperative Medical Scheme.

Location of delivery

The percentage of women who gave birth outside a health-care facility declined rapidly from 45% (535/1181) in 1998 to 10% (148/1481) in 2007, with most of these deliveries occurring at home. In 1998 and 2007, a skilled birth attendant was present at 58% (286/491) and 39% (41/106) of home births, respectively. In 1998, the most common reason for a home birth, as reported by the women, was that they did not feel a need to deliver in a health-care facility (44%; 216/491); the second most common reason was financial difficulties (29%; 144/491). In 2007, the most common reason was a fast delivery (40%; 42/106) and the second most common was financial difficulties (24%; 25/106).

The proportion of women who gave birth in a township hospital remained the same over the study period, but the proportion who delivered at a county or higher-level hospital increased dramatically from 28% (333/1181) in 1998 to 60% (892/1481) in 2007 (Fig. 1). On average, the Caesarean delivery rate increased over time, from 6% (65/1181) in 1998 to 26% (378/1481) in 2007. Although the rate increased in all income groups in all years, women with a high income were always more likely to have a

Table 1. Demographic and socioeconomic characteristics of women giving birth in rural China, 1998–2007

Characteristic	1998–1999 (n=2 425)	2000–2002 (n=3 780)	2003–2005 (n=2 973)	2006–2007 (n=2 688)
	No. (%)	No. (%)	No. (%)	No. (%)
Age in years^a				
15–24	969 (40.0)	1601 (42.4)	1169 (39.4)	1211 (45.1)
25–29	929 (38.3)	1295 (34.3)	914 (30.8)	705 (26.2)
30–49	525 (21.7)	881 (23.3)	882 (29.7)	772 (28.7)
Educational level^b				
Illiterate or primary school	1222 (50.4)	1640 (43.4)	1078 (36.3)	845 (31.4)
Secondary school	1058 (43.7)	1848 (48.9)	1613 (54.3)	1591 (59.2)
High school or higher	143 (5.9)	288 (7.6)	280 (9.4)	251 (9.3)
With health insurance^c	278 (11.5)	423 (11.2)	2764 (93.0)	2465 (91.7)
Parity^d				
1	1237 (51.1)	2067 (54.7)	1458 (49.2)	1408 (52.6)
≥2	1186 (48.9)	1711 (45.3)	1505 (50.8)	1268 (47.4)

^a Data were missing for two women in 1998–1999, three in 2000–2002 and eight in 2003–2005.

^b Data were missing for two women in 1998–1999, four in 2000–2002, two in 2003–2005 and one in 2006–2007.

^c Data were missing for seven women in 1998–1999 and nine in 2000–2002.

^d Data were missing for two women in 1998–1999, two in 2000–2002, 10 in 2003–2005 and 12 in 2006–2007.

Caesarean delivery than those with a low income (Fig. 1).

Expenditure on delivery

Expenditure on delivery outside a health-care facility increased by 415% over the study period, from US\$ 13 in 1998 to US\$ 67 in 2007. In each year, facility-based delivery was more expensive than delivery outside a health-care facility and, among facility-based deliveries, a Caesarean delivery was much more expensive than a vaginal delivery (Fig. 2). In 2007, expenditure on a Caesarean

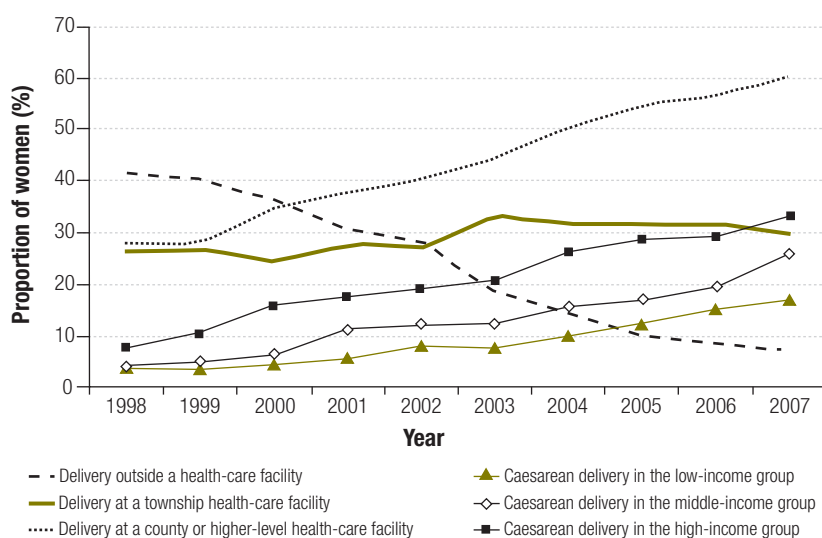
delivery was 3.5 times the expenditure on a vaginal delivery. Total expenditure on a facility-based delivery increased by 152% over the study period, from US\$ 102 in 1998 to US\$ 258 in 2007. Expenditure on a vaginal delivery increased by 226%, from US\$ 45 to US\$ 146, and on a Caesarean delivery, by 58%, from US\$ 326 to US\$ 515. For both vaginal and Caesarean deliveries, the greatest increase was seen from 2002 onwards ($P < 0.01$).

Since reimbursement data were not available for 2002 and since only around 11% of women had health insurance

before 2003 (Table 1), we regarded out-of-pocket expenditure as being equal to total expenditure on delivery in 2002. Between 2002 and 2007, annual household income approximately doubled in all income groups. In these two years, both total and out-of-pocket expenditure on facility-based delivery were higher for medium- and high-income groups than for the low-income group. The increase in total expenditure on facility-based delivery between 2002 and 2007 was around 100% in medium- and high-income groups and 84% in the low-income group. Out-of-pocket expenditure on delivery also increased, but less substantially; the smallest increase was in the low-income group (Table 2). In 2007, out-of-pocket expenditure on delivery consumed 13.1% of annual household income in the low-income group, compared with 9.0% and 5.6% in medium- and high-income groups, respectively. Out-of-pocket expenditure as a percentage of annual household income had declined since 2002 on average, and differences between the income groups had become smaller.

For vaginal deliveries alone, the greatest increases in total and out-of-pocket expenditure between 2002 and 2007 were observed in the low-income group: 184% and 115%, respectively. However, in both these years, women in medium- and high-income groups spent more than women in the low-income group. Out-of-pocket expenditure on vaginal delivery as a percentage of annual household income did not change greatly in any income group. The highest

Fig. 1. Proportion of women giving birth at or outside of a health-care facility in rural China, by level of facility, and the proportion who had a Caesarean delivery, by household income,^a 1998–2007



^a Households were divided into three groups of equal size according to the average of their income in 2002 and 2007 combined: low-, medium- and high-income.

percentage was 7.4% in the low-income group in 2007.

For Caesarean deliveries alone, the highest total and out-of-pocket expenditures were in the high-income group in both 2002 and 2007. The increase in expenditure between 2002 and 2007 was also greatest in the high-income group: 63% for total expenditure and 40% for out-of-pocket expenditure. In both 2002 and 2007 and in all income groups, out-of-pocket expenditure on Caesarean delivery consumed a high percentage of annual household income; the percentage was particularly high in the low-income group, at 31.8% in 2007. The percentage declined between 2002 and 2007 and differences between the income groups narrowed (Table 2).

Factors affecting out-of-pocket expenditure

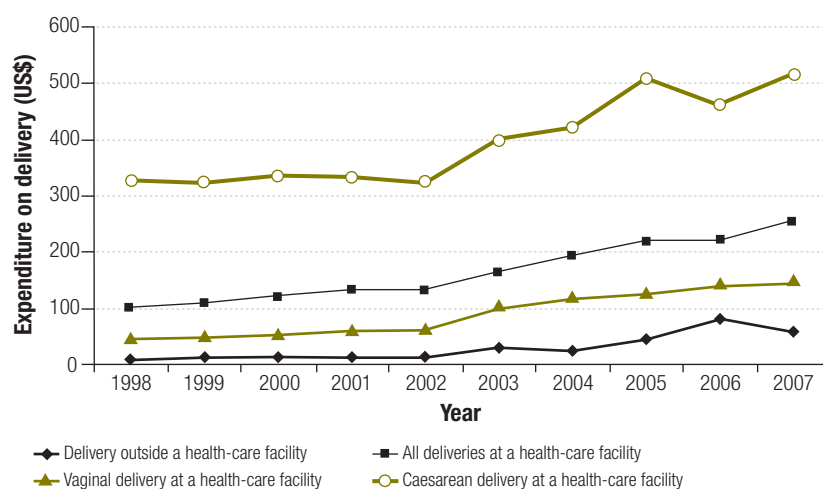
Factors affecting out-of-pocket expenditure on facility-based delivery in 2007 were investigated by linear regression analysis using the logarithmic value of expenditure. After adjusting for all variables simultaneously, we found that expenditure on delivery was significantly higher in women aged over 30 years, in those with a high school or higher education, in those with a medium or high household income and in those with a parity of one. In addition, expenditure on a Caesarean delivery was significantly higher than on a vaginal delivery and expenditure on delivery at a county- or higher-level health-care facility was significantly higher than at a township facility. Health insurance cover was associated with significantly lower out-of-pocket expenditure on facility-based delivery. The coefficients derived by the linear regression model are shown in Table 3.

The analysis was repeated for out-of-pocket expenditure on vaginal and Caesarean deliveries separately. Health insurance cover was not associated with lower out-of-pocket expenditure for vaginal delivery, but it was for Caesarean delivery (Table 3). The effects of age, household income, parity and the location of the health-care facility were similar to those found in the analysis of out-of-pocket expenditure on all deliveries.

Discussion

We found that the proportion of women who gave birth at a health-care facility in rural China increased greatly in the pe-

Fig. 2. Expenditure^a on delivery at or outside of a health-care facility in rural China, by type of delivery,^b 1998–2007



US\$, United States dollar.

^a Expenditure was adjusted for inflation.

^b All deliveries outside a health-care facility were vaginal deliveries.

riod 1998–2007. Moreover, in 2007 the majority of births occurred at a county- or higher-level health-care facility. There was also a notable increase in the proportion of Caesarean deliveries in rural areas. Total expenditure on a facility-based delivery (both vaginal and Caesarean) increased markedly, particularly between 2002 and 2007, after the New Cooperative Medical Scheme was introduced. Out-of-pocket expenditure also increased, but less substantially. Having health insurance was associated with reduced out-of-pocket expenditure on a facility-based delivery, particularly on a Caesarean delivery. Out-of-pocket expenditure on a facility-based delivery as a percentage of annual household income decreased over the study period. However, the percentage remained high in the low-income group, even in 2007.

Study limitations

The data collected in the two national household health service surveys has previously been shown to be of satisfactory quality in terms of the representativeness of the sample and reliability.¹⁰ Nevertheless, there are several limitations. First, interviewees had to recall information over a period of 1 to 5 years. However, most analyses were performed using data for the year immediately before the surveys (i.e. for 2002 and 2007), so that serious recall bias is unlikely. Moreover, any inaccuracies would probably be similar in the two time periods and should not have influenced the trend in expenditure

reported in this paper. Second, out-of-pocket expenditure on delivery in 2002 may have been slightly overestimated because, although a small proportion of women had health insurance that year, expenditure was assumed to be equal to total expenditure on delivery owing to the unavailability of reimbursement data. In addition, since the level of reimbursement for a delivery under the New Cooperative Medical Scheme varied across counties and since data on these variations were not available, the study findings should be viewed as preliminary.

Location and type of delivery

The increase in expenditure on facility-based delivery was associated with an increase in the use of higher-level health-care facilities. This suggests that women were highly aware of and accepted the need for a safe delivery. Higher-level health-care facilities, such as those at county and city hospitals, are often regarded by the general population as providing good care, as a result of which they are often overloaded with patients.¹¹ Conversely, township hospitals, particularly in poor areas, are often poorly equipped, have fewer qualified staff and have poor sanitary conditions and hygiene.⁷ Understandably, women may find them unattractive as a place of delivery. However, overuse of high-level health-care facilities has been found to affect the efficiency of service provision without increasing patient satisfaction or improving health.¹¹ Moreover, the longer distance to

Table 3. Regression coefficients (β) obtained from the linear regression model of the logarithm of out-of-pocket expenditure on delivery at a health-care facility in rural China, 2007

Characteristic	Deliveries		
	All (n=1 333)	Vaginal (n=955)	Caesarean (n=378)
	β	β	β
Age in years			
15–24 ^a	–	–	–
25–29	–0.02	0.04	0.13
30–49	0.26**	0.29**	0.18
Educational level			
Illiterate or primary school ^a	–	–	–
Secondary school	0.08	0.08	0.02
High school or higher	0.18*	0.14	0.15
Household income			
Low ^a	–	–	–
Medium	0.25**	0.28**	0.08
High	0.45**	0.55**	0.16*
Parity			
1 ^a	–	–	–
2 or more	–0.24**	–0.33**	–0.05
Health-care facility level			
Township ^a	–	–	–
County or higher	0.10**	0.08*	0.10*
Health insurance			
No ^a	–	–	–
Yes	–0.16**	–0.05	–0.35**
Mode of delivery			
Vaginal delivery ^a	–	–	–
Caesarean delivery	1.32**	–	–
R ²	0.2049	0.2370	0.1987

* $P < 0.05$; ** $P < 0.01$. Two-tailed test of significance.^a Reference category.

was associated with lower out-of-pocket expenditure on Caesarean delivery but not on vaginal delivery. Generally the scheme provides a fixed payment for vaginal delivery. Consequently, while expenditure on vaginal delivery has increased dramatically, the level of reimbursement has remained low, resulting in high costs for women. On the other hand, the scheme views Caesarean delivery as necessitating hospitalization and reimburses accordingly; the reimbursement may cover 40–50% of expenditure. In this way the New Cooperative Medical Scheme has helped reduce out-of-pocket expenditure on Caesarean delivery. However, as long as fee-for-service payment to health care providers continues, the scheme may not mitigate charges for

women but may instead contribute to an increase in the income of health-care providers by encouraging Caesarean delivery, even in cases where there is no medical indication.¹⁴

Out-of-pocket expenditure on facility-based delivery as a percentage of annual household income decreased during the study period, mainly because rural household incomes increased. However, in 2007, expenditure on facility-based delivery equalled 13% of the mean annual income of low-income households. This is a heavy financial burden on families, as it is above the 10% of annual household income that serves as the threshold for catastrophic health-care spending.¹⁸ The burden was even higher for women from low-income households who had

a Caesarean delivery, since one-third of the mean annual household income had to be spent on the delivery. Families are at great risk of health-care induced poverty¹⁹ and delivery care for the poorest households has become less affordable. In addition, many of the costs of prenatal and postnatal care are not usually covered by health insurance schemes. For example, for families who live some distance from a health-care facility, the costs of transportation, accommodation and food, and the cost in time for the women as well as for their accompanying family members, can be considerable.²⁰

Conclusion

With the aim of enabling convenient access and improving cost-effectiveness,²¹ we recommend investing in and expanding the capacity of health-care facilities at the township level in rural China. The creators of financial mechanisms for funding health-care facilities and health-care providers should avoid introducing perverse financial incentives. The New Cooperative Medical Scheme should focus on women's needs and should not encourage health-care providers to promote services that are not medically necessary.

In conclusion, the rise in the proportion of births taking place at higher-level health-care facilities, the increase in Caesarean deliveries and the introduction of the New Cooperative Medical Scheme have all contributed to a rise in expenditure on facility-based delivery. Although recent increases in rural household income have mitigated the financial burden of facility-based delivery for families in general, the burden remains high for the poor. ■

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Competing interests: None declared.

ملخص

الولادة في مرفق الرعاية الصحية في المناطق الريفية في الصين: هل هو ميسور التكلفة على الفقراء؟

152%، بزيادة واضحة ابتداءً من عام 2002 مع بدء الخطة الطبية التعاونية الجديدة. وفي عام 2007، بلغ الإنفاق على الولادة في المرافق من جيوب المواطنين 13% من المتوسط السنوي لدخل الأسر ذات الدخل المنخفض. وانخفضت هذه النسبة عن 18% في عام 2002، وتقلصت الفروق بين فئات الدخل. وأظهرت نماذج التحوُّف ارتباط الولادة القيصرية والولادة في المرافق العالية المستوى مع ارتفاع الإنفاق في عام 2007. وارتبطت الخطة الطبية التعاونية الجديدة بإنفاق أقل من جيوب المواطنين على الولادة القيصرية ولكنها لم ترتبط بالولادة المهبلية. الاستنتاج زاد الإنفاق على الولادة في المرافق زيادةً هائلةً في المناطق الريفية في الصين خلال الأعوام 2007-1998 بسبب زيادة اللجوء إلى المرافق العالية المستوى، والولادات القيصرية، وإدخال الخطة الطبية التعاونية الجديدة. وظل العبء المالي على الفقراء في الريف عبثًا ثقيلًا.

الغرض تقصي التغيرات التي طرأت على الإنفاق على الولادة في مرافق الرعاية الصحية في المناطق الريفية في الصين خلال الأعوام 2007-1998، لفحص العبء المالي على الأسر، ولإسبغ الفقيرة منها، والتعرُّف على العوامل المرتبطة بالإنفاق على الولادة من جيوب المواطنين. الطريقة جمع الباحثون المعطيات المستعرضة عن الولادة في الفترة من 1998 إلى 2007 من المسوحات الوطنية للأسر التي أُجريت في عامي 2003 و 2008. واستخدموا الإحصائيات الوصفية وطرز اللوغاريتم الخطي للتعرف على العوامل المرتبطة بالإنفاق على الولادة من جيوب المواطنين. النتائج خلال الأعوام 2007-1998، زادت نسبة الولادات في مرافق الرعاية من 55% إلى 90%. وفي عام 2007، جرت 60% من الولادات في المرافق على مستوى القطر أو في المرافق الأعلى مستوى. وزاد معدل الجراحات القيصرية من 6% إلى 26%. وارتفع إجمالي الإنفاق على الولادة في المرافق بمقدار

الخلاصة

في الصين الريفية: هل يستطيع الفقراء تحمل تكاليف الولادة في المرافق الصحية؟

الهدف يهدف إلى دراسة التغيرات في النفقات الصحية في المرافق الصحية الريفية في الصين بين عامي 1998 و 2007، وتحليل العبء المالي الناتج عن الولادة في المرافق الصحية، وتحديد العوامل المرتبطة بالنفقات الصحية في المرافق الصحية الريفية. **الطريقة** تم جمع البيانات من المسوحات الوطنية للأسر التي أجريت في عامي 2003 و 2008. **النتائج** خلال الأعوام 2007-1998، زادت نسبة الولادات في المرافق الصحية من 55% إلى 90%. وفي عام 2007، جرت 60% من الولادات في المرافق الصحية على مستوى القطر أو في المرافق الأعلى مستوى. وزاد معدل الجراحات القيصرية من 6% إلى 26%. وارتفع إجمالي الإنفاق على الولادة في المرافق بمقدار

المرتبطة بالإنفاق على الولادة من جيوب المواطنين. **النتائج** خلال الأعوام 2007-1998، زادت نسبة الولادات في مرافق الرعاية من 55% إلى 90%. وفي عام 2007، جرت 60% من الولادات في المرافق على مستوى القطر أو في المرافق الأعلى مستوى. وزاد معدل الجراحات القيصرية من 6% إلى 26%. وارتفع إجمالي الإنفاق على الولادة في المرافق بمقدار

Résumé

Donner naissance dans un établissement médical en Chine rurale: les pauvres peuvent-ils se le permettre?

Objectif Étudier l'évolution des dépenses liées à la naissance dans les établissements de soins de santé en Chine rurale durant les années 1998-2007, analyser la charge financière afférente sur les ménages, en particulier les plus pauvres, et identifier les facteurs associés aux paiements directs.

Méthodes Des données croisées sur les naissances entre 1998 et 2007 ont été obtenues à partir d'enquêtes nationales sur les ménages réalisées en 2003 et en 2008. Des statistiques descriptives et des modèles par régression (log-linéaires) ont été utilisés pour identifier les facteurs associés aux paiements directs relatifs aux naissances.

Résultats Pendant les années 1998-2007, la proportion d'accouchements en maternité s'est accrue de 55 à 90%. En 2007, 60% des naissances ont eu lieu dans des centres de comté ou dans des établissements plus importants. Le taux d'accouchements par césarienne est passé de 6 à 26%. Les dépenses totales pour accouchement en établissement médical ont augmenté de 152%, avec une augmentation marquée depuis 2002, suite à l'introduction du nouveau système d'assurance-maladie facultatif

(New Cooperative Medical Scheme). En 2007, les paiements directs pour un accouchement dans un établissement médical comptaient pour 13% des revenus annuels moyens des ménages à faible revenu. Cette proportion a diminué de 18% en 2002 et les différences entre les tranches de revenu se sont estompées. Les modèles par régression montrent que l'accouchement par césarienne et l'accouchement dans un établissement de plus haut niveau s'accompagnaient de dépenses plus élevées en 2007. Le nouveau système d'assurance-maladie facultatif était, quant à lui, associé à des paiements directs moindres pour l'accouchement par césarienne, mais non pour l'accouchement par voie basse.

Conclusion Les dépenses afférentes à l'accouchement en établissement de soins de santé ont beaucoup augmenté dans la Chine rurale entre 1998 et 2007 du fait du recours plus fréquent à des établissements de plus haut niveau, du nombre accru d'accouchements par césarienne et de l'introduction du nouveau système médical d'assurance-maladie. La charge financière sur les familles rurales pauvres est restée élevée.

Резюме

Доступны ли по цене беднякам из сельских районов Китая роды в медицинском учреждении?

Цель Изучить, как изменились расходы на родовспоможение в медицинских учреждениях сельских районов Китая в период с 1998 по 2007 годы, проанализировать финансовое бремя, лежащее на домохозяйствах (в частности, на бедняках) и выявить факторы, связанные с расходами «из кармана пациента».

Методы На основе общенациональных опросов домохозяйств, проведенных в 2003 и 2008 годах, были получены кросс-секционные данные о рождаемости в период с 1998 по 2007 год. Для выявления факторов, связанных с расходами на родовспоможение «из кармана пациента», использовались описательная статистика и логлинейные модели.

Результаты В 1998–2007 годах доля родов, принятых в медицинских учреждениях, возросла с 55 до 90%. В 2007 году 60% рождений происходило в медицинских учреждениях уездного или более высокого уровня. Доля родов с использованием кесарева сечения возросла с 6 до 26%. Общая сумма расходов на проведение родов в медицинском учреждении выросла на 152%, особенно начиная с 2002 года, с внедрением новой схемы кооперативного медицинского страхования в сельских районах. В 2007 году расходы «из

кармана пациента» на проведение родов для домохозяйств с низким доходом составляли 13% среднего годового дохода домохозяйства. Этот процентный показатель, составлявший в 2002 году 18%, снизился, а различия между группами населения с различными уровнями дохода уменьшились. Модели регрессии показали, что в 2007 году роды с помощью кесарева сечения и роды в медицинском учреждении более высокого уровня коррелировали с более высокими расходами. Новая схема кооперативного медицинского страхования коррелировала со снижением расходов «из кармана пациента» на проведение родов с использованием кесарева сечения, а не вагинальных родов.

Вывод В период 1998–2007 годов расходы на проведение родов в медицинских учреждениях в сельских районах Китая значительно возросли в связи с расширением использования медицинских учреждений более высокого уровня, увеличением количества родов с использованием кесарева сечения и внедрением новой схемы кооперативного медицинского страхования. Финансовое бремя, лежащее на бедных слоях населения сельских районов, продолжало оставаться высоким.

Resumen

Dar a luz en un centro sanitario de una zona rural de China: ¿resulta asequible para los más pobres?

Objetivo Investigar los cambios que ha experimentado el gasto correspondiente al alumbramiento en los centros sanitarios de las zonas rurales de China entre 1998 y 2007, con el fin de examinar la carga económica que supone para las familias, especialmente para las más desfavorecidas, y para identificar los factores asociados a los desembolsos efectuados.

Métodos Se obtuvieron los datos de una muestra aleatoria y representativa de los nacimientos que tuvieron lugar entre 1998 y 2007 a través de las encuestas llevadas a cabo en hogares entre 2003 y 2008. Se emplearon estadísticas descriptivas y modelos logarítmicos lineales para identificar los factores asociados con los desembolsos efectuados para la asistencia al parto.

Resultados Durante el periodo comprendido entre 1998 y 2007, la proporción de partos en centros sanitarios aumentó de un 55% a un 90%. En 2007, el 60% de los nacimientos tuvieron lugar en centros sanitarios del condado o de un ámbito territorial más elevado. El porcentaje de partos por cesárea aumentó de un 6% a un 26%. El gasto total en partos asistidos en un centro sanitario aumentó en un 152%, registrando un

marcado aumento desde 2002 en adelante con la introducción del Nuevo Sistema de Asistencia Médica Cooperativa. En 2007, los desembolsos efectuados para un parto asistido en un centro sanitario equivalieron al 13% de los ingresos anuales medios de un hogar de bajos ingresos. Esta proporción supuso un descenso desde el 18% registrado en 2002 y las diferencias entre grupos de ingresos se redujeron. Los modelos de regresión mostraron que los partos por cesárea y los partos en los centros sanitarios de un nivel superior estuvieron asociados a un mayor gasto en 2007. El Nuevo Sistema de Asistencia Médica Cooperativa se asoció a un menor desembolso efectuado en los partos por cesárea, pero no en los partos vaginales.

Conclusión El gasto en partos asistidos en centros sanitarios ha aumentado significativamente en China entre 1998 y 2007 debido a un mayor uso de las instalaciones de un nivel más elevado, a un mayor número de partos por cesárea y a la introducción del Nuevo Sistema de Asistencia Médica Cooperativa. La carga económica para las familias más desfavorecidas del entorno rural siguió siendo elevada.

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