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Diagnostic delays in access to tuberculosis care in counties with or without the National Tuberculosis Control Programme in rural China

B. Xu,*† Q-W. Jiang,* Y. Xiu,* V. K. Diwan†

* School of Public Health, Fudan University, Shanghai, China; † Department of Public Health Sciences, Division of International Health (IHCAR), Karolinska Institutet, Stockholm, Sweden

SUMMARY

SETTING: A county covered by the National Tuberculosis Control Programme (NTP) (Jianhu) and a non-programme county (Funing) in Jiangsu Province, China.
OBJECTIVE: To compare diagnostic delays among tuberculosis (TB) patients between counties with and without the NTP, and to study the impact of demographic, socioeconomic and policy factors on the delays.
DESIGN: A cohort study of 493 newly diagnosed TB patients registered in the study sites during 2002 was conducted using a structured questionnaire interview.
RESULT: The median total diagnostic delay was longer in Jianhu County, 31 (14–68) days, compared to Funing County, 19 (12–34) days, with a shorter patient's delay (10 vs. 16 days, $P < 0.05$) but a longer doctor's delay (6 vs. 0 days, $P < 0.01$) in Jianhu than in Funing. Smear-positive TB accounted for 86% of patients in Jianhu, compared to 37% in Funing. Less educated and uninsured patients had longer patient's or doctor's delays in Jianhu, while in Funing poor patients and farmers had both longer patient's and doctor's delays.
CONCLUSION: The subsidised NTP leads to a shorter patient's delay, but a longer doctor's delay, with a substantially higher proportion of smear-positive TB diagnosis. Education, medical insurance, poverty and the system of TB control can influence patients' access to TB care.
KEY WORDS: tuberculosis; delay; National Tuberculosis Control Programme; poverty; China

CHINA has the second highest burden of tuberculosis (TB) worldwide, with approximately 1.4 million new TB cases yearly, of which 650 000 are smear-positive.[1,2] The modern TB control strategy has, since 1992, been adopted by the National TB Control Programme (NTP) using funding from the World Bank loaned to the China Health V Project and funding from the Chinese Ministry of Health (MOH).[3] By the end of 2000, the NTP covered 59% of rural counties.[4] The NTP follows the DOTS strategy and provides free or subsidised TB care to smear-positive TB patients. A reduction in the prevalence of pulmonary and smear-positive TB of 32% was attributed to the World Bank funded DOTS strategy.[5] The MOH-funded NTP also greatly improved notification of infectious cases, with cure rates higher than 90%.[6]

The key principle for TB control in a high-prevalence area is to reduce TB transmission through early detection and prompt treatment of infectious TB cases. The Chinese government has committed itself to reaching the global target of detecting 70% of new smear-positive TB cases by 2005.[7] In 2000, the case detection rate of TB in China was estimated at 33%.[1] This low case detection rate could be due to either demand or supply factors or a combination of both. On the demand side, case detection can remain low due to financial barriers to accessing TB care. Poverty has been reported as one of the most important risk factors associated with a longer delay in obtaining TB care.[1,8,9] Lack of medical insurance,[10] sex,[11–13] age[14] and low education levels[15] can also delay patients in seeking health care. From the supply perspective, poor capacity to diagnose TB may result in missed or false diagnoses.[16,17] Importantly, TB control programmes themselves may have delayed TB diagnoses due to the use of rigid approaches.[18]

In China, poverty has been reported as the most important factor causing delay in health care seeking.[19,20] Among the TB patients identified in the 4th National TB Survey, 37% ascribed their delays in clinical consultation to financial problems.[21]

The objective of this study was to describe and compare access to TB diagnosis among TB cases as measured in elapsed time from onset of symptoms to

Correspondence to: Prof Biao Xu, 138 Yi Xue Yuan Road, Department of Epidemiology, School of Public Health, Fudan University, Shanghai 200032, China. Tel: (+86) 21 54237710. Fax: (+86) 21 63052506. e-mail: bxu@shmu.edu.cn or catherinexu61@yahoo.com

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TB diagnosis (diagnostic delay) in two rural counties, one with and one without the NTP, and to study the impact of selected socio-economic, demographic, health care seeking behaviours and disease presentation variables on patient's and doctor's delays.

METHODOLOGY

Study setting

The study was performed in 2002 in Jianhu County (JH), which has NTP coverage through financial support by MOH and/or provincial government, and Funing County (FN), which has no NTP coverage. Both counties are located in Jiangsu Province, east China. The populations in JH and FN were 797 000 and 1 060 000, respectively, in 2001. The average annual income per capita was approximately 3500 yuan (¥) (US$1 = ¥8.3) in both counties.[22] The three-tiered health care system in both counties includes village health stations, township hospitals and county hospitals. There is a county TB dispensary (CTD) in both counties that is responsible for TB case registration and reporting. The diagnosis of TB follows the NTP criteria, based on the recommendations of the World Health Organization (WHO) and the International Union Against Tuberculosis and Lung Disease (IUATLD).[3,23]

JH County has been covered by the NTP, with a convergence TB management system, since 1996. All TB diagnoses in JH are performed in the CTD, where patients either self-refer or are referred by physicians in township or county hospitals. Between January and September 2002, smear-positive TB patients in JH paid ¥140 for the 6-month treatment course.

In FN County, no subsidised TB care was available before the time of sampling. Uncentralised TB care was provided by both township and county hospitals as well as by the CTD. Confirmation of TB diagnosis using the same NTP criteria was, however, done quarterly in the CTD based on the patients' medical charts, chest X-ray films, and smear slides. The average expenditure for a 6–9 month course of TB treatment was around ¥600–900.

Since 18 September 2002, the NTP has been implemented, financed by the Canadian International Development Association (CIDA) in both counties, with free TB diagnosis and treatment provided for smear-positive TB patients in the CTD. The management process to implement this new project took some time to be functional, however.

Study design and subjects

This was a cohort study of all 493 newly diagnosed TB patients registered by the CTD between 1 January and 31 December 2002—187 from JH and 306 from FN. The registration rates for new TB cases were respectively 23.4 and 28.9 per 100 000 population.

Data collection

All the subjects were interviewed at the time of TB diagnosis at the CTD in JH, or in the department of internal medicine of the township/county hospitals and the CTD in FN, by the physicians who underwent a 2-day training course for the interview. A structured questionnaire was used that covered general demographic and socio-economic characteristics, as well as disease history and health care seeking experiences from the onset of symptoms to obtaining TB diagnosis.

Definitions

'Total diagnostic delay' refers to the duration from first symptoms to TB diagnosis, which is the sum of 'delay to first health care provider' and 'provider's delay', or the sum of 'patient's delay' and 'doctor's delay'. 'Delay to first health care provider' is the duration from the onset of symptoms to first visit to any health care provider, including both doctors and village health workers or pharmacists. 'Provider's delay' is from first visit to any health care provider to TB diagnosis. 'Patient's delay' is from the onset of symptoms to the first visit to a doctor in a township/county hospital (or higher). 'Doctor's delay' is from first hospital visit to TB diagnosis (Figure 1). These terms follow the definitions by Long et al. modified for this study.[8]

Data analysis

The database was created using Epi Info 6.04 (Centers for Disease Control and Prevention, Atlanta, GA). SPSS 11.0 (SPSS Inc, Chicago, IL) was used in analysis. Medians and quartiles were reported using the Mann-Whitney test. Cox regression analysis was employed to assess the impacts of socio-economic and other variables on delays.

RESULTS

Background characteristics and diagnosis of subjects

A total of 86% (168/187) of new TB cases from JH and 38% (166/306) from FN were smear-positive ($P < 0.01$). The background characteristics between the two counties were comparable, apart from a higher proportion of farmer patients in JH. About 95% of the subjects did not have any kind of medical insurance, and 92% had an average annual income that was lower than the local average income (Table 1).

Diagnostic delays in JH and FN counties

The delay is strongly skewered, resulting in large differences between the arithmetic means and the median observations. We have used medians instead of means, as the mean is influenced by single extreme observations. This, however, has the drawback of not permitting additions of sequential delays.

The median total diagnostic delay was 31 (14–68) days in JH, longer than the 19 (12–34) days in FN ($P <$

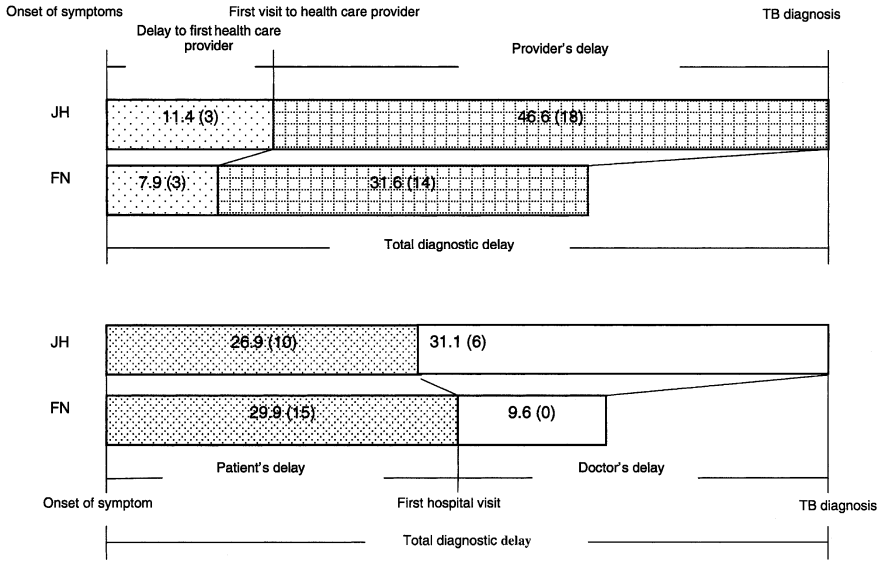

Figure 1 Definitions and mean (median) delays in JH and FN County (days). TB = tuberculosis; JH = Jianhu County; FN = Funing County.

0.01). Provider's delay and doctor's delay were longer, while patient's delay was shorter in JH than in FN ($P < 0.01$). Delays for smear-positive and -negative TB cases were not significantly different ($P > 0.05$) (Table 2, Figure 1). Comparing the diagnostic delays before and after implementation of the CIDA programme, no statistically significant difference was found in either county ($P > 0.05$).

Influence of socio-economic and non-economic factors on patient's delay and doctor's delay

In JH, patient's delay was longer among patients with lower education and higher age; doctor's delay was associated with a lack of medical insurance. In FN, non-farmers had a shorter patient's delay, while younger patients and uninsured patients had a longer doctor's delay (Table 3).

Cox regression was applied in parallel in JH and FN to control for possible confounding of the influences on patient's and doctor's delay. Here the risk ratio (RR) is an indicator that reflects the probability of having a shorter delay: RR > 1 indicates a greater probability, while RR < 1 indicates a lower probability.

In terms of patient's delay, in JH, patients with more years of education had a shorter delay (RR 2.0, $P < 0.01$), as did patients who worked outside their home town (RR 2.1, $P < 0.05$). In FN, from low- to high-income quartile (Group 1 to Group 3), the probability of a shorter patient's delay was, respectively, 63% ($P < 0.01$), 72% ($P < 0.05$) and 87% of that of the highest income quartile (Group 4). Farmers were 64% less likely to have a shorter patient's delay than non-farmers ($P < 0.01$). Patients who visited a hospital first and patients with haemoptysis had a shorter patient's delay in both counties ($P < 0.01$) (Table 4).

Table 1 Background characteristics and TB diagnosis of subjects

Characteristics	JH county *n* (%)	FN county *n* (%)	*P* value*
Age, years			
0–19	10 (5.4)	20 (6.5)	0.128
20–39	61 (32.6)	86 (28.5)	
40–59	60 (32.1)	128 (41.5)	
⩾60	56 (29.9)	72 (23.5)	
Sex			
Male	140 (74.9)	216 (70.6)	0.314
Female	47 (25.1)	90 (29.4)	
Education†			
⩽6 years	104 (55.6)	167 (54.6)	0.877
>6 years	83 (44.4)	138 (45.4)	
Occupation‡			
Non-farmer	30 (16.0)	92 (30.1)	0.002§
Farmer	138 (73.8)	188 (61.4)	
Work away	19 (10.2)	26 (8.5)	
Medical insurance†			
Insured	9 (4.8)	18 (5.9)	0.612
Uninsured	178 (95.2)	287 (94.1)	
Income compared to local average			
<60%	155 (82.9)	253 (83.0)	0.999
60–99%	18 (9.6)	29 (9.5)	
⩾100%	14 (7.5)	23 (7.5)	
Smear test			
Positive	161 (86.1)	115 (37.6)	0.000§
Negative	26 (13.9)	191 (62.4)	
Smear-positive			
+	59 (36.6)	100 (87.0)	0.000§
++	54 (33.5)	14 (12.2)	
+++	48 (29.8)	1 (0.8)	

* χ^2 test.
† One missing value.
‡ Occupation was grouped as farmers (farming work on land only), work away (both farming work on land and physical work away from home town), and non-farmers (no farming work on land).
§ $P < 0.01$ (significant).
TB = tuberculosis; JH = Jianhu County; FN = Funing County; +, ++, +++ = levels of positivity.

Table 2 Duration of diagnostic delays in JH and FN County (days)

	Mean total (SS+, SS−)*†	Median total (SS+, SS−)*†	Quartile	*P* value‡
Delay to first health care provider§				0.915
JH County	11.4 (12.3, 6.57)	3 (3, 2)	1–13	
FN County	7.9 (7.5, 8.4)	3 (3, 4)	1–5	
Patient's delay§				0.002¶
JH County	26.9 (27.1, 30.5)	10 (12, 6)	2–34	
FN County	29.9 (27.4, 30.9)	15 (14, 13)	7–32	
Provider's delay§				0.001¶
JH County	46.6 (42.3, 78.1)	18 (17, 20)	5–49	
FN County	31.6 (36.6, 27.7)	14 (15, 13)	7–31	
Doctor's delay§				<0.000
JH County	31.1 (27.5, 54.1)	6 (6, 6)	2–18	
FN County	9.6 (16.8, 5.2)	0 (0, 0)	0–5	
Total diagnostic delay§				
JH County	58.0 (54.5, 54.1)	31 (31, 42)	12–68	<0.000
FN County	39.5 (44.7, 36.1)	19 (19, 19)	11–35	

* Student's *t*-test on mean delays or Mann-Whitney test on median delays between smear-positive and -negative patients in each county.
† $P > 0.05$, non-significant.
‡ *P* value from Mann-Whitney test on delays between counties.
§ One missing value in each county.
¶ $P < 0.01$.
JH = Jianhu County; FN = Funing County; SS+ = sputum smear-positive; SS− = sputum smear-negative.

In terms of doctor's delay, insured patients had a shorter delay than uninsured patients (RR 2.6, $P < 0.05$) in JH. In FN, patients who were farmers or farmers working away from home were respectively 60.0% and 32.4% as likely to have a shorter doctor's delay as non-farmer patients ($P < 0.05$). Poor patients overall had a lower probability of earlier TB diagnosis ($P < 0.05$), although the differences between Income Groups 1–3 and Group 4 were not statistically significant. Patients with haemoptysis had a longer doctor's delay because haemoptysis should be controlled before further diagnosis ($P < 0.05$) (Table 4).

Among all 493 TB patients, only 2% in JH and 1% in FN visited the CTD directly (Figure 2). Before receiving TB diagnosis, 178 patients in JH and 147 patients in FN had at least one hospital/CTD visit; among these, 60 in JH and 18 in FN had two or more hospital/CTD visits.

DISCUSSION

The study surprisingly showed a longer total diagnostic delay in the NTP covered county (median 31 days [range 14–68]) than in the non-programme covered county (median 19 days [range 12–34]), due to the longer provider's or doctor's delay in the NTP county. However, a shorter patient's delay was achieved in the NTP county. This study was institution based, following the passive case finding strategy implemented in China. Even more serious problems related to diagnostic delay may exist among patients who do not seek care for their illness or seek care only at the village health stations or pharmacies.

Table 3 Medians of patient's and doctor's delay in different demographic and socio-economic status groups in JH and FN (days)*

	JH County		FN County	
Variable	Patient's delay	Doctor's delay	Patient's delay	Doctor's delay
Sex				
Male	12	6	15	0
Female	9	6	15	0
Education, years				
≤6	15†	6	16	0
>6	5	5	14	0
Age, years				
0–19	1‡	3	10	0‡
20–39	9	7	14	0
40–59	13	6	20	0
≥60	13	6	15	0
Occupation				
Farmer	10	6	16‡	0
Work away	10	10	18	0
Non-farmer	8	6	13	0
Insurance				
Yes	20	1†	13	0‡
No	10	6	15	0
Income quartile§				
Group 1	10	8	15	0
Group 2	14	6	15	0
Group 3	18	4	16	0
Group 4	6	5	13	0

* *P* value from Mann-Whitney test.
† $P < 0.01$.
‡ $P < 0.05$.
§ Quartile of family-based individual income from low to high.
JH = Jianhu County; FN = Funing County.

Although China has been experiencing dramatic economic development since the 1980s, 32 million rural people were still living in poverty in 2000.[24]

Table 4 Factors influencing patient's and doctor's delay by Cox regression in JH and FN

	JH County		FN County	
Variable	*P* value	RR (95%CI)	*P* value	RR (95%CI)
Patient's delay				
Age, years	0.070		0.442	
0–19/≥60	0.493	1.36 (0.57–3.27)	0.923	0.97 (0.54–1.74)
20–39/≥60	0.121	0.70 (0.44–1.10)	0.792	0.94 (0.62–1.45)
40–59/≥60	0.335	1.22 (0.81–1.83)	0.144	0.79 (0.58–1.08)
Sex: male/female	0.478	1.16 (0.78–1.72)	0.348	0.88 (0.68–1.15)
Education: >6 years /≤6 years	0.001*	2.01 (1.35–3.01)	0.180	1.19 (0.93–1.52)
Occupation	0.013†		0.005	
Farmer/non-farmer	0.873	0.96 (0.62–1.50)	0.001*	0.64 (0.49–0.84)
Work away/non-farmer	0.021†	2.12 (1.12–4.02)	0.138	0.70 (0.45–1.12)
Insurance: insured/uninsured	0.647	1.20 (0.55–2.62)	0.711	0.91 (0.54–1.52)
Income quartile	0.056		0.045†	
Group 1/Group 4	0.748	0.92 (0.57–1.51)	0.009*	0.63 (0.45–0.89)
Group 2/Group 4	0.012†	0.54 (0.34–0.87)	0.048†	0.72 (0.51–1.00))
Group 3/Group 4	0.224	0.74 (0.46–1.12)	0.433	0.87 (0.63–1.22)
Haemoptysis: yes/no	0.000*	3.27 (1.77–6.06)	0.002*	25.29 (3.31–192.52)
Cavity: yes/no	0.385	1.14 (0.85–1.51)	0.592	0.91 (0.65–1.28)
1st visit: hospital/non-hospital	0.000*	2.58 (3.82–3.66)	0.000*	1.96 (1.43–2.69)
Doctor's delay				
Age, years	0.335		0.109	
0–19/≥60	0.087	0.50 (0.23–1.10)	0.028†	2.46 (1.10–5.48)
20–39/≥60	0.904	0.98 (0.67–1.42)	0.805	0.94 (0.55–1.60)
40–59/≥60	0.808	1.05 (0.72–1.54)	0.664	1.12 (0.67–1.90)
Sex: male/female	0.382	0.85 (0.58–1.23)	0.378	0.80 (0.49–1.31)
Education: >6 years/≤6 years	0.404	0.84 (0.56–1.27)	0.135	0.67 (0.40–1.13)
Occupation	0.347		0.017†	
Farmer/non-farmer	0.162	1.37 (0.88–2.11)	0.022†	0.60 (0.39–0.93)
Work away/non-farmer	0.643	1.16 (0.62–2.16)	0.019†	0.32 (0.13–0.83)
Insurance: yes/no	0.016†	2.58 (1.20–5.56)	0.581	0.82 (0.41–1.66)
Income quartile	0.344		0.012†	
Group 1/Group 4	0.203	0.74 (0.47–1.12)	0.063	0.60 (0.35–1.03)
Group 2/Group 4	0.377	0.82 (0.52–1.28)	0.553	1.19 (0.67–2.13)
Group 3/Group 4	0.084	0.68 (0.43–1.06)	0.114	1.53 (0.90–2.59)
Haemoptysis: yes/no	0.157	0.67 (0.39–1.17)	0.024†	0.09 (0.01–0.72)
Cavity: yes/no	0.374	1.10 (0.89–1.37)	0.691	0.89 (0.50–1.58)

* $P < 0.01$.
† $P < 0.05$.
JH = Jianhu County; FN = Funing County; RR = risk ratio; CI = confidence interval.

Moreover, more than 90% of the rural population pay for their own medical care.[25] Furthermore, hospital out-patient and in-patient charges increased three- to four-fold in the period 1990–1996, due to a combination of hospitals' dependence on fee-for-service revenue and profit-related bonus incomes for the doctors.[26,27] Poor people's access to health care has therefore been severely constrained.

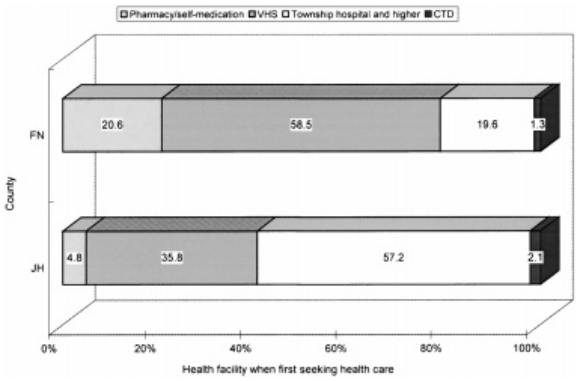

Figure 2 Health facility selection for first health care seeking action in JH and FN. VHS = village health stations; CTD = county TB dispensary; JH = Jianhu County; FN = Funing County.

In this study, the vast majority of patients were uninsured and lived on low incomes. In JH, the MOH-funded NTP has been implemented for 7 years. Information about the subsidised NTP has been disseminated through broadcasts, posters and by training primary health care providers; this has been reinforced annually. Patients with early TB symptoms could have a shorter patient's delay regardless of their poverty status due to an improved awareness of TB and NTP. In the non-NTP county, poor patients and farmer patients had both longer patient's and doctor's delay. It appears that poverty negatively influences patients' access to TB care there. Although income did not show a significant influence on delays in JH, it should be emphasised that less educated patients, patients who first visited the village health station or a pharmacy rather than a hospital and uninsured patients had longer delays. In rural China, well-educated people usually have formal-sector employment, which entails not only better income, but also medical insurance coverage.[28] Poor patients were more likely to visit

a village health station for its low-fee services, although village health workers have limited medical training.[29]

Results from this study showed that patients in JH had considerably longer provider's and doctor's delays than in FN. As described above, under the convergence management system, the duration from the patient's first health care seeking to TB diagnosis depends on the duration until the patient is referred to the CTD and obtains a smear-positive diagnosis. The obvious advantage of the convergence management system is the accuracy of diagnosis: a much higher proportion of smear-positive TB diagnosis with evenly distributed smear-positive plus was obtained in JH, while only 14 (12%) and 1 of the 115 smear-positive patients in FN had ++ or +++ results, respectively. With the zero days doctor's delay in FN, it could be speculated that most patients did not provide all three sputum specimens (overnight and/or morning and on-spot sputum) advised by the MOH China,[3] based on WHO/IUATLD recommendations,[23] although the exact information about how many patients had not been diagnosed based on three sputum samples was not accessible. Our previous qualitative study in the two counties found that the laboratory equipment in the non-programme county for smear tests was poor, and the attitude of the laboratory technician doing smear tests was very negative.[29] Thus, there may be some misdiagnosed and falsely diagnosed TB patients in the hospitals. A matter of concern is that patients often started anti-tuberculosis treatment long before their TB diagnoses were confirmed, a problem that could increase the risk of resistance to anti-tuberculosis drugs. The economic burden of anti-tuberculosis treatment and the psychological pressure of having TB weigh considerably on these patients. The excluded suspects are also a source of concern given the low level of the laboratory work.

The disadvantage of the convergence management system is, as evidenced by this study, that TB diagnosis can be delayed during referrals. A quarter of the subjects in JH had a doctor or provider's delay of up to 3 or 8 weeks, respectively, only 2.1% of the patients selected the CTD when first seeking health care, and the majority of patients went to general hospitals where smear tests were not provided. The fee-for-service incentive of health providers at different levels of health care appears to result in prolonged provider's and doctor's delay.[4,27] Moreover, visiting the CTD costs money and time, and especially for patients with a smear-negative result, more trips are required to have repeat smear tests. It should be emphasised that the longer provider's and doctor's delay in the NTP-covered county can increase the risk of TB transmission to the community and the family. This is clearly a serious threat to the primary objective of the NTP, to reduce TB prevalence. It is recommended that more peripheral smear microscopy services should be considered to improve rural patients' access to smear-based TB diagnosis.

CONCLUSION

The results of this study indicate that the financial status, other socio-economic and non-economic characteristics of the patient, as well as the NTP itself, influence the delay from onset of symptoms to TB diagnosis. To improve access to TB care and to reach the case detection target of 70% in 2005, general hospitals and primary level providers need to be better integrated into the NTP. The challenges are how to strengthen the case finding capacity of primary health care and how to address the providers' loss of revenue due to the provision of free TB care.

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RÉSUMÉ

CONTEXTE : Les sites d'étude ont été un comté couvert par le Programme National de Lutte contre la Tuberculose (PNT), soit Jianhu, et un comté sans programme, soit Funing, dans la Province de Jiangsu en Chine.

OBJECTIF : Comparer les délais de diagnostic chez les patients tuberculeux entre les comtés avec ou sans PNT et étudier l'impact des facteurs démographiques, socio-économiques et de stratégie sur les délais.

SCHÉMA : Une étude de cohorte de 406 patients tuberculeux récemment diagnostiqués et enregistrés dans les sites d'étude au cours de l'année 2002 a été menée en utilisant une interview par questionnaire structuré.

RÉSULTAT : Le délai total médian de diagnostic a été plus long, soit 31 jours (14–68), dans le Comté de Jianhu par comparaison au 19 jours (12–34) dans le Comté de Funing, avec un délai-patient plus court (10 vs. 16 jours, $P < 0{,}05$) mais un délai-médecin plus long (6 vs. 0 jours, $P < 0{,}01$) à Jianhu par rapport à Funing. Les cas de TB à bacilloscopie positive ont représenté 86% des patients à Jianhu par comparaison avec 37% à Funing. A Jianhu, chez les patients à niveau de formation scolaire plus faible et sans assurance, les délais-patient et -médecin sont plus longs, alors qu'à Funing, les délais-patient et-médecin sont plus longs tant chez les patients pauvres que chez les fermiers.

CONCLUSION : Le PNT subsidié raccourcit le délai-patient mais allonge le délai-médecin et comporte une proportion substantiellement plus élevée de diagnostic de TB à bacilloscopie positive. Le niveau de formation scolaire, l'assurance médicale, la pauvreté et le système de lutte antituberculeuse pourraient influencer l'accès de patients aux soins de la TB.

RESUMEN

MARCO DE REFERENCIA : El estudio se llevó a cabo en Jianhu, una circunscripción cubierta por el Programa Nacional de Tuberculosis (PNT) y en Funing, una circunscripción por fuera del programa, en la provincia de Jiangsu, en China.

OBJETIVOS : Comparar el retraso diagnóstico para los pacientes con tuberculosis (TB) entre las circunscripciones cubiertas o no por el PNT y estudiar el impacto de los factores demográficos, socioeconómicos y políticos en tal retraso.

MÉTODOS : Se realizó un estudio de cohortes de 406 pacientes con diagnóstico reciente de TB en las regiones estudiadas durante el año 2002, mediante una entrevista con cuestionario estructurado.

RESULTADOS : La mediana del retraso diagnóstico total fue mayor en la circunscripción de Jianhu (31 días, de 14 a 68), que en la de Funing (19 días, de 12 a 34) y se observó un menor retraso de los pacientes (10 contra 16 días, $P < 0{,}05$) y un mayor retraso médico (6 contra 0 días, $P < 0{,}01$) en Jianhu, comparado con Funing. Los casos de TB con baciloscopia positiva representaron el 86% de los pacientes en Jianhu, comparados con el 37% en Funing. En Jianhu, las personas con menor grado de educación tuvieron un mayor retraso por parte del paciente y quienes carecían de seguro médico presentaron un mayor retraso médico. En la circunscripción de Funing, fueron los pacientes pobres y los granjeros quienes experimentaron ambos, mayor retraso diagnóstico del paciente y del médico.

CONCLUSIÓN : El PNT subsidiado de control de la TB conduce a un menor retraso de los pacientes, pero a un mayor retraso por parte de los médicos para el diagnóstico y también a una proporción considerablemente más alta de diagnóstico de TB con baciloscopia positiva. La educación, el seguro médico, la pobreza y el sistema de control de la TB pueden modificar el acceso de los pacientes a la atención médica.