

# Using case vignettes to measure HIV-related stigma among health professionals in China

Li Li,<sup>1\*</sup> Zunyou Wu,<sup>2</sup> Yu Zhao,<sup>1</sup> Chunqing Lin,<sup>2</sup> Roger Detels<sup>3</sup> and Sheng Wu<sup>1</sup>

---

<b>Accepted</b>	21 October 2006
<b>Background</b>	We examined Chinese health professionals' attitudes towards patients with AIDS vs patients with hepatitis B.
<b>Methods</b>	A representative sample of 1101 Chinese health professionals was used. Prejudicial attitudes and willingness to interact were measured based on two case vignettes.
<b>Results</b>	Statistical analyses revealed that health professionals had negative biases against acquired immunodeficiency syndrome (AIDS) patients and reported much less willingness to interact with AIDS patients than hepatitis B patients. Perceived risk of infection at work was also negatively associated with willingness to interact with patients with human immunodeficiency virus (HIV)/AIDS, but relationships varied by profession.
<b>Conclusions</b>	This study underscores the importance of developing and implementing stigma reduction interventions in health care settings to address attitudinal biases and discrimination in clinical practice.
<b>Keywords</b>	HIV stigma, HIV/AIDS, health care, China, hepatitis B

---

## Introduction

Stigma is an important factor that affects the quality of life of people living with human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) (PLWHA). At the front line of the war against HIV/AIDS, health service providers are positioned to respond with needed services and care. However, HIV-related stigma and discrimination continue to impede an effective response for treatment and care for PLWHA worldwide. Many studies have documented health care professionals' discriminatory attitudes and behaviours toward PLWHA and the direct negative consequences they have on the quality of life for PLWHA.<sup>1–10</sup> To start addressing HIV-related stigma in health care settings, researchers have made efforts to understand its multiple origins and various forms.<sup>8,11–21</sup>

Measuring HIV stigma poses a special challenge to the research community.<sup>22–25</sup> There are a growing number of programmes to reduce stigma and more people are becoming

aware of stigma and discrimination against PLWHA. However, direct questions to service providers about stigmatizing attitudes or behaviours are likely to elicit socially desirable rather than truthful answers. Also, HIV-related stigma is a complex construct with multiple dimensions, and the use of a one or two-item measure has failed to identify the spectrum of stigmatization. Perhaps for these reasons, many intervention programmes targeting HIV stigma do not have reliable ways of measuring their efficacy.<sup>25,26</sup>

Case vignettes have been used for measuring physicians' practice patterns and have gained considerable support because of their predictive value of physician behaviour.<sup>27–31</sup> Investigators have found that physicians' responses to cases are a good indication of what they will actually do in a clinical setting. Kelly and colleagues<sup>1</sup> used case vignettes to assess physician attitudes concerning HIV/AIDS. The vignettes were identical except that the patient's illness was either AIDS or leukaemia. They found that physicians reported much less willingness to interact with an AIDS patient than with a leukaemia patient.<sup>1</sup> A similar study conducted with a sample of 63 dentists in post-graduate training revealed a bias against homosexuals and individuals with AIDS.<sup>32</sup> Case vignettes were also used in a Japanese study that measured university students' attitudes toward PLWHA: significant differences were reported in attitude depending on the infection route.<sup>33</sup>

<sup>1</sup> UCLA-NPI Center for Community Health, University of California, Los Angeles, CA, USA.

<sup>2</sup> Chinese Center for Disease Control and Prevention, Beijing, China.

<sup>3</sup> UCLA School of Public Health, University of California, Los Angeles, USA.

\* Corresponding author. Li Li, PhD, UCLA-NPI Center for Community Health, 10920 Wilshire Blvd., Suite #350, Los Angeles, CA 90024 USA.  
E-mail: lililili@ucla.edu

The present study was undertaken to gain a better understanding of health professionals' attitudes toward patients with AIDS compared with patients with the hepatitis B virus (HBV). Measures of health professionals' attitudes in terms of prejudicial attitude and willingness to interact were constructed based on the two case vignettes. We also explored the relationships between these attitude measures and other factors such as demographics, training and HIV-related knowledge and perceived risk infection.

## Materials and methods

### Subjects

The study population consisted of health professionals who were currently working at general public health care facilities in Yunnan province, China. Yunnan has the highest number of reported HIV infections in China (40% of all reported HIV cases).<sup>34,35</sup> Prior to initiating participant contact, the authors' institutional review boards approved the study proposal and the procedure for obtaining informed consent from participants. In order to obtain a representative sample, we gathered staffing information from hospitals and clinics in the three study sites before sampling. We randomly selected 3 provincial hospitals, 4 city/prefecture hospitals, 10 county hospitals, 18 township health clinics and 54 village clinics. Doctors, nurses and lab technicians were recruited from each site; lab technicians were oversampled to allow adequate representation in the analysis. A total of 1101 randomly selected health professionals participated in a self-administered questionnaire between January and August 2005, with less than an 8% refusal rate. All survey data were collected anonymously.

The sample was primarily female (74.4%) and Han, the racial majority in China (72.2%). Approximately 26% of the respondents were <30 years and 29% were ≥41 years. More than 40% of the sample came from provincial hospitals or city hospitals and about 13% from township or village clinics. Slightly more than one half of all participants were doctors, 40% were nurses and nearly 10% were lab technicians. Within all participants, 45% had experienced personal contact with a PLWHA and 68% reported receiving HIV-related training. At the time of the survey, only about 28% of the participants had a 4-year medical education or higher. The demographics of our participants are comparable with the 2003 data reported by the National Bureau of Statistics of China.<sup>36</sup>

### Measures

The Health Professional Survey, developed specifically for this project, contains a total of 172 questions assessing demographics, medical training and experience, and attitude and behaviour toward AIDS patients and PLWHA in general. In this survey, two case vignettes were given to the participants. The vignettes depicted a college graduate who, through solid performance, advanced through management in the computer firm where he was employed. He was an outgoing individual who participated in many athletic pursuits. Gradually, he developed health problems, including fatigue, physical decline and recurrent infections. His doctor told him that he was seriously ill. His condition caused his long-term girlfriend to

become emotionally distant and he later lost his job. The two vignettes (Xiao Wang and Xiao Zhang) given to participants were exactly the same except that Xiao Wang's illness was identified as AIDS while Xiao Zhang's was identified as hepatitis B. In each vignette, there were 14 questions to elicit health professionals' attitudes towards the patient. Based on the questions in the two vignettes, two scales were constructed: a prejudicial evaluation scale and a social interaction scale. The development of the two case vignettes and two scales were based on the study conducted by Kelly and colleagues.<sup>1</sup>

The prejudicial evaluation scale consisted of eight items (e.g. Xiao Wang/Zhang is responsible for his illness; Xiao Wang/Zhang should be quarantined so he does not expose it to others; Xiao Wang/Zhang deserves sympathy and understanding), with each item scored from 1 (strongly agree) to 5 (strongly disagree). To quantify the scale, we reversed the score direction of some items by using 6 minus the original scores so that higher scores indicate a higher degree of prejudicial attitude. For each item, vignette difference was calculated by taking the difference in responses between the AIDS vignette and the hepatitis B vignette. A mean score of the differences of all eight items was used as an index for the prejudicial evaluation scale. In this scale, a higher score means a higher level of prejudicial attitude towards AIDS patients compared with hepatitis B patients.

The social interaction scale was constructed similarly (e.g. you would be willing to work in the same office as Xiao Wang/Zhang; if you met Xiao Wang/Zhang, you would be willing to strike up a conversation with him; if you were a friend of Xiao Wang/Zhang, you would be willing to continue the friendship at this time.), except that a higher score indicated a higher willingness of social interaction with AIDS patients.

Perceived infection risk at work was constructed by a combination of the following three items: (i) is there a possibility of having a dirty needle stuck into your skin at your job? (ii) if you had a dirty needle stuck into your skin on the job, what is the likelihood that you would get infected with HIV? (iii) if you provide medical care to HIV-positive patients, what is the likelihood that you will become infected with HIV? Survey participants responded to each of the three questions with a response category ranging from 0 (not possible) to 3 (high possibility). In this scale, a higher number was associated with higher perceived risk of HIV infection at work ( $\alpha=0.70$ ).

Knowledge of HIV/AIDS was formed by 10 questions that have been used, together or separately, in many HIV studies to measure HIV-related knowledge: (i) is AIDS curable? (ii) can HIV be transmitted through pregnancy? (iii) can HIV be transmitted through childbirth? (iv) can HIV be transmitted through breast-feeding? (v) can mosquitoes transmit HIV? (vi) can HIV be transmitted through daily contact, such as sharing public bathrooms? (vii) can HIV transmission be stopped by more nutrient intake? (viii) can physical exercise stop HIV transmission? (ix) is an HIV vaccine already available? (x) are patients with sexually transmitted diseases more likely to get HIV? For each item, response was coded as 1 (correct answer) or 0 (incorrect answer or unknown). The scale for knowledge of HIV/AIDS was constructed as a sum of all 10 items.

We also included variables on respondents' demographic information such as age, gender, ethnicity (Han or minority),

**Table 1** Case vignette item comparison with paired *t*-test

Variables	AIDS	Hepatitis B	95% CI of difference	<i>P</i> -value*
<b>Prejudicial evaluation</b>				
Responsible for his illness	3.32	2.63	0.62, 0.75	<0.001
Deserves sympathy and understanding	3.85	4.22	-0.41, -0.32	<0.001
Deserves what has happened to him	2.17	1.69	0.42, 0.52	<0.001
Dangerous to other people	3.09	2.48	0.54, 0.68	<0.001
Deserves the best medical care possible	4.23	4.40	-0.21, -0.14	<0.001
Should be quarantined	2.92	2.75	0.10, 0.24	<0.001
Deserves to lose his job	2.07	1.67	0.35, 0.45	<0.001
His girlfriend should break up with him	3.03	2.21	0.75, 0.87	<0.001
<b>Social interaction</b>				
Willing to strike up a conversation	3.96	4.17	-0.25, -0.17	<0.001
Willing to attend a party where preparing of food is involved	3.40	3.29	0.05, 0.18	<0.001
Willing to work in the same office	3.70	3.97	-0.31, -0.22	<0.001
Willing to continue the friendship at this time	3.78	4.11	-0.37, -0.28	<0.001
Allow your children to visit	3.00	3.40	-0.46, -0.34	<0.001

\* The *P*-value is from paired *t*-test.

medical degree, professional category (doctor, nurse or lab technician), personal contact with PLWHA (yes or no) and HIV-related training status (yes or no). Moreover, the level of care or type of medical facilities to which the respondent belonged was coded as provincial hospital, city hospital, county hospital, township hospital or village clinic.

### Data analysis

SAS statistical software was used to perform all the analyses. For each item included in the prejudicial evaluation scale or the social interaction scale, paired *t*-test was used to test the differences between the item scores. Then analysis of variance (ANOVA) was performed to determine whether the scores of the prejudicial evaluation scale or the social interaction scale were different among participants with different age, gender, ethnicity, medical education, level of care, profession and HIV-related training. Furthermore, based on the whole sample and stratified by participants' professions, Pearson correlation coefficients were calculated to investigate relationships between prejudicial attitude, social interaction, perceived infection risk at work and HIV knowledge.

## Results

Results from case vignette item comparisons with paired *t*-test are presented in Table 1. The score directions of all items were reversed so that all items ranged from 1 (strongly disagree) to 5 (strongly agree). We also provided the 95% confidence intervals for differences obtained from item scores from the AIDS vignette minus the corresponding item scores from the hepatitis B vignette. Significant differences were found in all items, as 12 of 13 items showed a higher level of prejudicial attitude toward AIDS patients and less willingness to have social interaction with AIDS patients ( $P < 0.001$ ).

The exception was related to the item on participants' willingness to attend a party where the patient was preparing food, which showed higher prejudice towards the hepatitis B patient ( $P < 0.001$ ).

The results of ANOVA analysis of prejudicial evaluation and social interaction are reported in Table 2. The prejudicial evaluation scale was significantly different among health professionals with different medical education ( $P < 0.01$ ), where the providers with higher medical education tended to report a higher level of prejudicial attitude towards AIDS patients than hepatitis B patients. Health professionals from different levels of health care (provincial/city hospital, county hospital, township/village clinic) also had significantly different scores on the prejudicial evaluation scale ( $P < 0.001$ ), suggesting that health professionals from higher level medical facilities exhibited a higher level of prejudicial attitude towards AIDS patients. In addition, health professionals with HIV-related training tended to show significantly lower prejudicial attitudes towards AIDS patients ( $P < 0.05$ ).

The social interaction scale indicated that health professionals with higher medical education or from higher-level facilities showed less willingness to have social interaction with AIDS patients compared with hepatitis B patients. The social interaction scale was also significantly different among participants with different professions ( $P < 0.05$ ); doctors tended to report the highest level of willingness to have social interaction with AIDS patients and lab technicians exhibited the lowest level of willingness to interact.

Table 3 summarizes Pearson correlation coefficients between prejudicial evaluation, social interaction, perceived infection risk at work and HIV knowledge, with or without stratification on participants' professions. For all participants, there was a significantly negative relationship between the prejudicial evaluation scale and the social interaction scale ( $r = -0.47$ ,  $P < 0.001$ ). Prejudicial evaluation was positively correlated with perceived infection risk at work ( $r = 0.10$ ,  $P < 0.01$ ).

**Table 2** Prejudicial evaluation and social interaction scales by demographics ( $n=1101$ )

	Prejudicial evaluation		Social interaction	
	Mean (SD)	P-value	Mean (SD)	P-value
<b>Age</b>		0.1278		0.7538
29 or younger	0.44 (0.48)		-0.20 (0.55)	
30–35	0.47 (0.46)		-0.21 (0.58)	
36–40	0.53 (0.55)		-0.26 (0.66)	
41 or older	0.43 (0.50)		-0.21 (0.64)	
<b>Gender</b>		0.0697		0.2592
Female	0.48 (0.47)		-0.23 (0.58)	
Male	0.42 (0.53)		-0.18 (0.66)	
<b>Ethnicity</b>		0.4985		0.2950
Han	0.47 (0.49)		-0.23 (0.61)	
Minority	0.45 (0.50)		-0.19 (0.57)	
<b>Medical education</b>		0.0012		0.0018
Lower than associate medical degree	0.40 (0.50)		-0.15 (0.60)	
Associate medical degree	0.50 (0.45)		-0.23 (0.59)	
Medical degree or higher	0.51 (0.52)		-0.31 (0.61)	
<b>Level of care</b>		<0.0001		<0.0001
Provincial/City hospitals	0.53 (0.49)		-0.37 (0.57)	
County hospital	0.46 (0.51)		-0.20 (0.60)	
Township/Village clinics	0.34 (0.45)		0.03 (0.59)	
<b>Profession</b>		0.1031		0.0421
Doctor	0.44 (0.49)		-0.19 (0.59)	
Nurse	0.47 (0.47)		-0.23 (0.60)	
Lab technician	0.55 (0.55)		-0.35 (0.67)	
<b>HIV-related training</b>		0.0498		0.2061
Yes	0.44 (0.49)		-0.20 (0.59)	
No	0.50 (0.49)		-0.25 (0.64)	

Total number may be <1101 because of missing cases.

The correlation between social interaction and perceived infection risk at work was also significantly negative ( $r = -0.11$ ,  $P < 0.001$ ).

With stratification by provider profession, we found that associations between prejudicial attitude and perceived infection risk at work were different with different professions, as nurses reported a significant positive relationship but doctors and lab technicians did not. Moreover, the relationships between social interaction and perceived infection risk at work were also different among providers with different professions. We found that doctors' and nurses' willingness to have social interaction with AIDS patients tended to decrease significantly as perceived infection risk at work increased. However, there was no significant association between the social interaction scale and perceived infection risk at work for technicians.

## Discussion

This study provides further evidence that case vignettes can be a useful tool for measuring health professionals' attitudes towards patients with different diseases. They can be used for diverse clinical settings and different cultures. HBV shares

similar infection routes with HIV; however, HBV infection can be prevented by vaccination while, currently, there is no effective vaccine for HIV. The findings of reported significant differences in service providers' attitudes towards the two diseases in this study suggest that HIV-related stigma may come from specific fears directly related to disease and death. Fear of death was one of the five dimensions of fear of AIDS in health professionals reported by Ross and Hunter.<sup>3</sup> We speculate that the biggest difference between HBV and HIV is that the former may not be seen as life-threatening while the latter may be associated with death. Furthermore, we speculate that HIV-related stigma (vs HBV) is more strongly associated with already socially marginalized groups, such as men who have sex with men, injection drug users and sex workers. This 'double stigma' influences the attitudes of service providers and affects all PLWHA, regardless of their infection routes.

In comparing the two case vignettes, we found that health professionals had shown negative biases and attributions related to AIDS patients in almost all of the questions. They believed that AIDS patients were more responsible and deserving of illness and less deserving of sympathy than hepatitis B patients. They also reported much less willingness to interact with a PLWHA than with a hepatitis B patient,

**Table 3** Correlation coefficients among select scales

Variable	Prejudicial evaluation	Social interaction	Perceived risk	HIV knowledge
Whole sample ( <i>n</i> = 1101)				
1. Prejudicial evaluation	1.00			
2. Social interaction	-0.47***	1.00		
3. Perceived infection risk at work	0.10**	-0.11***	1.00	
4. HIV knowledge	-0.00	-0.01	0.07*	1.00
Doctor only ( <i>n</i> = 557)				
1. Prejudicial evaluation	1.00			
2. Social interaction	-0.48***	1.00		
3. Perceived infection risk at work	0.08	-0.12**	1.00	
4. HIV knowledge	0.00	0.03	0.10*	1.00
Nurse only ( <i>n</i> = 439)				
1. Prejudicial evaluation	1.00			
2. Social interaction	-0.43***	1.00		
3. Perceived infection risk at work	0.14**	-0.11*	1.00	
4. HIV knowledge	0.05	-0.09	0.02	1.00
Lab technician only ( <i>n</i> = 105)				
1. Prejudicial evaluation	1.00			
2. Social interaction	-0.52***	1.00		
3. Perceived infection risk at work	0.01	0.02	1.00	
4. HIV knowledge	-0.14	0.10	0.16	1.00

\**P* < 0.05; \*\**P* < 0.01; \*\*\**P* < 0.001.

even in highly casual contexts such as routine conversations, and even when none of the interactions described would carry any risk for HIV transmission. Some health professionals associate HIV more closely with marginalized groups (e.g. intravenous drug users, sex workers), and their responses to the case vignettes are likely to reflect what they would actually do in clinical settings. The different response to the question of attending a party where the patient is preparing food might be caused by the confusion about different infection routes of different types of hepatitis. Hepatitis A virus (HAV) can be transmitted via food; therefore, when 'hepatitis' was mentioned, the health care providers might have thought that it is a food-transmitted disease. This is probably why they presented a negative attitude toward hepatitis B patients regarding this particular question.

Unexpectedly, we found that health care providers in provincial or city hospitals showed the biggest differences in attitudes toward PLWHA and hepatitis B patients. These professionals were likely to have received the most professional medical training and to have had referrals of PLWHA who were experiencing opportunistic infection or other illnesses that are difficult to treat. At the same time, the providers with the highest education level also showed the greatest discriminatory behaviour towards PLWHA. The explanation might be that health care providers at a higher level of care and higher education level were likely to be more forthcoming about their opinions. They may also be more experienced in academic surveys and understand more about study research ethics, and therefore placed a greater amount of trust in the research staff members. As a result, their answers may in fact better reflect the real thinking of health professionals.

Another puzzling finding is that HIV knowledge was found not related to health professionals' willingness to interact with PLWHA and their prejudicial attitudes. This was consistent with conflicting results in the literature regarding relationships between HIV-related stigma and HIV knowledge.<sup>2,4,16,17</sup> In a review of 22 studies on interventions to reduce HIV/AIDS stigma, Brown and colleagues<sup>17</sup> reported that information alone is not sufficient to change attitudes or behaviour toward PLWHA, as it has little effect on deep-seated fears. The implications of this finding for the development of future stigma reduction interventions are substantial and deserve further investigation.

This study addressed two different HIV-related fears: fear of casual contagion and fear of occupational exposure. We found that perceived risk of infection at work reported by health professionals was negatively associated with their willingness to interact with PLWHA in daily routine activities. However, the relationships varied by type of profession. While both doctors' and nurses' willingness to interact with PLWHA were related to their perceived infection risk at work, the relationship was trivial for lab technicians. One possible explanation is that, for physicians and nurses, both fears of casual contagion and occupational risk are based on human contact, while lab technicians' views of occupational risk may not be related to direct contact with PLWHA, and therefore could be independent of their fear of casual contagion.

As the AIDS epidemic in China continues to spread and HIV testing becomes widely available, the number of PLWHA seeking health care will increase. Stigma and discrimination associated with HIV/AIDS in health settings undermine efforts

to fight the epidemic. Therefore, it is important that health care policy-makers and administrators give special consideration to interventions in health care settings to address provider attitudes and potential biases.

## Acknowledgements

This article was completed with the support of the National Institute of Mental Health grant R01MH070931.

### KEY MESSAGES

- HIV-related stigma and discrimination continue to impede an effective response for treatment and care for persons living with HIV/AIDS (PLWHA) worldwide.
- Case vignettes can be a useful tool for measuring health professionals' attitudes towards patients with different diseases.
- This study underscores the importance of developing and implementing stigma reduction interventions in health care settings to address attitudinal biases and discrimination in clinical practice.

## References

- <sup>1</sup> Kelly JA, St Lawrence JS, Smith S, Hood HV, Cook DJ. Stigmatization of AIDS patients by physicians. *Am J Public Health* 1987;**77**:789–91.
- <sup>2</sup> Crawford I, Humfleet G, Ribordy SC, Ho FC, Vickers VL. Stigmatization of AIDS patients by mental health professionals. *Prof Psychol Res Pract* 1991;**22**:357–61.
- <sup>3</sup> Ross MW, Hunter CE. Dimensions, content and validation of the fear of AIDS schedule in health professionals. *AIDS Care* 1991;**3**:175–80.
- <sup>4</sup> Schlebusch L, Bedford R, Bosch BA, du Preez MR. Health care professionals' knowledge about AIDS, prejudice and attitudes towards AIDS. *South African J Psychol* 1991;**21**:247–54.
- <sup>5</sup> Johnson SD. Model of factors related to tendencies to discriminate against people with AIDS. *Psychol Reports* 1995;**76**:563–72.
- <sup>6</sup> Green G, Platt S. Fear and loathing in health care settings reported by people with HIV. *Sociol Health Illness* 1997;**19**:70–92.
- <sup>7</sup> Surlis S, Hyde A. HIV-positive patients' experiences of stigma during hospitalization. *J Assoc Nurses AIDS Care* 2001;**12**:68–77.
- <sup>8</sup> Foreman M, Lyra P, Breinbauer C. *Understanding and Responding to HIV/AIDS-related Stigma and Discrimination in the Health Sector*. Washington, DC: Pan American Health Organization, 2003.
- <sup>9</sup> Khakha DC. Discrimination in health care to patients living with HIV/AIDS. *Nursing J India* 2003;**94**:273–75.
- <sup>10</sup> Chen W-T, Han M, Holzemer WL. Nurses' knowledge, attitudes, and practice related to HIV transmission in Northeastern China. *AIDS Patient Care STDs* 2004;**18**:417–22.
- <sup>11</sup> Gerbert B, Maguire B, Badner V, et al. Changing dentists' knowledge, attitudes, and behaviors relating to AIDS: a controlled educational intervention. *J Am Dent Assoc* 1988;**116**:851–54.
- <sup>12</sup> Shulman LC, Mantell LE. The AIDS crisis: a United States health care perspective. *Soc Sci Med* 1988;**26**:979–88.
- <sup>13</sup> Siminoff LA, Erlen JA, Lidz CW. Stigma, AIDS and quality of nursing care: state of the science. *J Adv Nursing* 1991;**16**:262–69.
- <sup>14</sup> de Graaf R, Houweling H, van Zessen G. Occupational risk of HIV infection among western health care professionals posted in AIDS endemic areas. *AIDS Care* 1998;**10**:441–52.
- <sup>15</sup> Herek GM, Capitanio JP, Widaman KF. HIV-related stigma and knowledge in the United States: Prevalence and trends, 1991–1999. *Am J Public Health* 2002;**92**:371–77.
- <sup>16</sup> Wu Z, Detels R, Ji G, et al. Diffusion of HIV/AIDS knowledge, positive attitudes, and behaviors through training of health professionals in china. *AIDS Educ Prev* 2002;**14**:379–90.
- <sup>17</sup> Brown L, Macintyre K, Trujillo L. Interventions to reduce HIV/AIDS stigma: What have we learned? *AIDS Educ Prev* 2001;**15**:49–69.
- <sup>18</sup> Marchal B, De Brouwere V, Kegels G. Viewpoint: HIV/AIDS and the health workforce crisis: what are the next steps? *Trop Med Int Health* 2005;**10**:300–04.
- <sup>19</sup> Chan KY, Reidpath DD. Future research on structural and institutional forms of HIV discrimination. *AIDS Care* 2005;**17**:S215–18.
- <sup>20</sup> Reidpath DD, Brijnath B, Chan KY. An Asia Pacific six-country study on HIV-related discrimination: introduction. *AIDS Care* 2005;**17**:S117–27.
- <sup>21</sup> Yang Y, Zhang K-L, Chan KY, Reidpath DD. Institutional and structural forms of HIV related discrimination in health care: a study set in Beijing. *AIDS Care* 2005;**17**:S129–40.
- <sup>22</sup> Berger BE, Ferrans CE, Lashley FR. Measuring stigma in people with HIV: psychometric assessment of the HIV stigma scale. *Res Nursing Health* 2001;**24**:518–29.
- <sup>23</sup> Emlert CA. Measuring stigma in older and younger adults with HIV/AIDS: an analysis of an HIV stigma scale and initial exploration of subscales. *Res Social Work Pract* 2005;**15**:291–300.
- <sup>24</sup> USAID Interagency Working Group on Stigma and Discrimination. *HIV/AIDS-related Stigma and Discrimination Indicators Development Workshop Report*. Washington DC: USAID, 2004.
- <sup>25</sup> USAID. *Working Report Measuring HIV stigma: Results of a Field Test in Tanzania*. Washington DC: USAID, 2005.
- <sup>26</sup> USAID. *Expanded Response Guide to Core Indicators for Monitoring and Reporting on HIV/AIDS programs*. Washington DC: USAID, 2003.
- <sup>27</sup> Rosenquist PB, Colenda CC, Briggs J, Kramer SI, Lancaster M. Using case vignettes to train clinicians and utilization reviewers to make level-of-care decisions. *Psych Services* 2000;**51**:1363–65.
- <sup>28</sup> Peabody JW, Luck J, Glassman P, Dresselhaus TR, Lee M. Comparison of vignettes, standardized patients, and chart abstraction: A prospective validation study of 3 methods for measuring quality. *JAMA* 2000;**283**:1715–22.
- <sup>29</sup> Peabody JW, Luck J, Glassman P, et al. Measuring the quality of physician practice by using clinical vignettes: a prospective validation study. *Ann Intern Med* 2004;**141**:771–80.
- <sup>30</sup> Himelhoch S, Gebo K, Breakey W, Powe NR. Schizophrenia, AIDS and the decision to prescribe HAART: results of a national survey of HIV clinicians. Poster session presented at the 131st Annual Meeting of the American Public Health Association, San Francisco, CA. Retrieved October 28, 2005 from [http://apha.confex.com/apha/131am/techprogram/paper\\_68436.htm](http://apha.confex.com/apha/131am/techprogram/paper_68436.htm).

- <sup>31</sup> Walkup J, Cramer LJ, Years J. How is stigmatization affected by the 'layering' of stigmatized conditions, such as serious mental illness and HIV? *Psychol Reports* 2004;**95**:771-79.
- <sup>32</sup> Cohen LA, Romberg E, Grace EG, Barnes DM. Attitudes of advanced dental education students toward individuals with AIDS. *J Dent Educ* 2005;**69**:896-900.
- <sup>33</sup> Arakawa O. (A study on disclosure by HIV positives by use of simulation using case vignettes). *Nippon Koshu Eisei Zasshi* 1997;**44**:749-59.
- <sup>34</sup> State Council AIDS Working Committee Office and UN. Theme Group on HIV/AIDS in China. *A Joint Assessment of HIV/AIDS Prevention, Treatment, and Care in China*. Beijing, China: UN Theme Group on HIV/AIDS in China, 2004.
- <sup>35</sup> US Embassy. AIDS In China: Yunnan Province Confronts HIV. Retrieved July 12, 2005 from <http://www.usembassy-china.org.cn/sandt/yunnanbarth.html>.
- <sup>36</sup> National Bureau of Statistics. China Statistics Yearbook, 2004. Retrieved October 2, 2005 from <http://www.stats.gov.cn/tjsj/ndsj>.