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POLICY AND PRACTICE

Prevention of mother-to-child transmission of syphilis and HIV in China: What drives political prioritization and what can this tell us about promoting dual elimination?

Dadong Wu^a, Sarah Hawkes^{a,*}, Kent Buse^b^a Institute for Global Health, University College London, London, UK^b The Joint United Nations Programme on HIV/AIDS (UNAIDS), Geneva, Switzerland

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ABSTRACT

Objective: The present study aims to identify reasons behind the lower political priority of mother-to-child transmission (MTCT) of syphilis compared with HIV, despite the former presenting a much larger and growing burden than the latter, in China, over the 20 years prior to 2010. **Methods:** We undertook a comparative policy analysis, based on informant interviews and documentation review of control of MTCT of syphilis and HIV, as well as non-participant observation of relevant meetings/trainings to investigate agenda-setting prior to 2010. **Results:** We identified several factors contributing to the lower priority accorded to MTCT of syphilis: relative neglect at a global level, dearth of international financial and technical support, poorly unified national policy community with weak accountability mechanisms, insufficient understanding of the epidemic and policy options, and a pre-vailing negative framing of syphilis that resulted in significant stigmatization. **Conclusion:** A dual elimination goal will only be reached when prioritization of MTCT of syphilis is enhanced in both the international and national agendas.

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1. Background

Mother-to-child transmission (MTCT) of syphilis can result in a spectrum of adverse outcomes, including stillbirths, neonatal deaths, premature and low birth weight infants, as well as congenital deformities [1,2]. In China, the reported incidence of congenital syphilis increased rapidly from 0.01 cases per 100 000 live births in 1991 to 64.41 cases in 2009 [1,3]. In 2009, 10 757 congenital syphilis cases were reported [3], compared with 57 cases of MTCT of HIV [4]. Further, according to health economic estimations, averting a single case of MTCT of syphilis in China costs approximately US \$4391 [5], compared with US \$7420 to avert an MTCT of HIV case [6].

Despite evidence of a rapidly increasing burden, the cost-effectiveness of (simple) interventions, and the existence of promising pilot programs at a local level [5], the prevention of MTCT (PMTCT) of syphilis was not a health policy priority in China prior to 2010. In contrast, PMTCT of HIV was high on the health agenda despite the relatively small number of cases reported annually. In 2004, the Ministry of Health (MOH) issued the National Working Guidelines to Prevent Mother-to-Child Transmission of HIV [7,8], which set targets to screen 85% of

pregnant women for HIV and provision of comprehensive care for 90% of mothers living with HIV and their infants. In 2006, the provision of PMTCT of HIV services was ratified by the Regulations on Prevention and Treatment of HIV/AIDS [8]—the first State Council decree directly aimed at controlling HIV.

In June 2010, the MOH (finally) issued the China 2010–2020 Plan for Syphilis Control and Prevention [9], indicating the beginning of national government commitment to control MTCT of syphilis. This plan set an overall target to reduce the incidence of MTCT of syphilis through dual control with MTCT of HIV to below 15 per 100 000 live births by 2020, as well as several stepwise but ambitious benchmarks for antenatal syphilis screening coverage (80% by 2015 and 90% by 2020) and intervention uptake among infected mothers and their infants (90% by 2015 and 95% by 2020). Three months later, in the National Guidelines for the Management of HIV Control Programs [10], the MOH further committed to providing integrated HIV, syphilis, and hepatitis B interventions for 80% of all pregnant women by 2015.

How and why did MTCT of HIV rise more swiftly and resolutely on the health agenda, particularly given its comparatively far lower burden? Herein, we investigate the contrasting cases of issue agenda-setting (i.e. generation of policy priority) [11] for the prevention of syphilis and HIV among pregnant women. By comparing the responses to these two infections we seek to understand the determinants of prioritization within the Chinese health policy arena. Lessons for

* Corresponding author at: UCL Institute for Global Health, 30 Guilford Street, London, WC1N 1EH, UK. Tel.: +44 207 905 2120.
E-mail address: s.hawkes@ucl.ac.uk (S. Hawkes).

political priority generation for MTCT of syphilis, particularly in relation to effective implementation of dual control with MTCT of HIV, are also explored.

2. Materials and methods

We used a policy framework developed by Shiffman [12], which assesses political prioritization across nine factors, to explore facets of agenda-setting for both infections. Through documentation review, stakeholder interviews, and nonparticipant observation of relevant meetings/trainings, policy-relevant data were collected and triangulated to minimize bias. We reviewed multiple types and sources of documentation, including government reports and policy documents, technical guidelines, epidemiological and implementation reports, training materials, published research, and mainstream media coverage.

From September 2011 to August 2012, we conducted 24 interviews at national ($n = 9$), provincial ($n = 3$), and city levels ($n = 12$). Informants were identified through consultation of documents and interviewee referrals. Interviewees included heads and program directors in national institutions, representatives of international agencies, local health officials, heads and directors in implementing institutions/hospitals, and academics. Nobody declined to be interviewed. Seven policy-relevant events were observed, including meetings and trainings relevant to PMTCT of HIV and syphilis at national ($n = 1$), provincial ($n = 1$), and city levels ($n = 4$), as well as national academic conferences ($n = 1$). Access to meetings was facilitated by stakeholders.

Interview and observation transcripts/notes and all documents were compared to verify the accuracy of information, coded for factors relevant to agenda-setting, and managed with NVIVO 10 (QSR international). Factor codes were grouped into themes allowing revision of existing themes and inclusion of emerging themes during iterative data analysis.

Drawing on these themes, we modified Shiffman's framework [12] to capture China's unique health policy context.

Ethical approval for this study was obtained from the Research Ethics Committee of University College London, United Kingdom.

3. Results

As shown in Table 1, prior to 2010, the levels of political priority received by and resources allocated to MTCT of HIV and syphilis varied markedly. PMTCT of HIV became one of the country's foremost health priorities around 2004, when the State Council AIDS Working Committee was established [8]. Financial inputs from central government increased from 6.43 million Yuan per year in 2003 to 82.66 million Yuan per year in 2009, facilitating expansion of the national PMTCT of HIV program from one pilot county in 2002 to 453 county-level divisions (out of 2862) in 2009 [4,13]. The rate of MTCT of HIV fell significantly from 30% in the early 2000s to 9% in 2009 [4]. For MTCT of syphilis control, however, special funding was not allocated and technical guidelines were not developed before 2010. Intervention coverage data were not available during this period, but the rapid rise in incidence suggests coverage was probably low. Several factors, as suggested by Shiffman [12], may have accounted for the differences observed in health policy priorities of MTCT of HIV and syphilis.

3.1. Global shaping of national norms

International advocates and organizations draw national political attention to particular issues through strategies, such as the promotion of norms, to set expectations for appropriate behaviors of national decision-makers [14]. From the early 2000s onwards, United Nations (UN) Millennium Development Goal 6 (to halt and reverse the spread

Table 1

Comparison of political attention and resources allocated for mother-to-child transmission (MTCT) of syphilis and HIV in China, 1991–2010.

	MTCT of syphilis	MTCT of HIV
1991–2000	First sentinel site established in 1991 [1] National standard of the People's Republic of China: diagnostic criteria and management of syphilis (GB 15974-1995) issued by the Ministry of Health (MOH) in 1996, recommended syphilis screening for high risk groups	First sentinel site established in Yining, Xinjiang Province, in 1997 [13]
2001–2005		Commitment to provision of prevention of mother-to-child transmission (PMTCT) of HIV services first mentioned in China Action Plan on HIV/AIDS Containment and Prevention (2001–2005) issued by the State Council in 2001 First pilot program initiated in Shanghai, Henan Province, by the MOH in 2002 [13] Former Premier Wen Jiabao visited AIDS patients at Ditan Hospital, Beijing, on World AIDS Day in December 2003 [7] The "Four Frees and One Care" policy initiated in 2003, indicating provision of free counselling, testing, and treatment to HIV-positive pregnant women and their infants [7] PMTCT of HIV was included in government annual budget planning and 6.43 million Yuan allocated from central government finance in 2003 [4] State Council AIDS Working Committee established in 2004 [7] Working Guidelines to Prevent Mother-to-Child Transmission of HIV issued by the MOH and national working group for PMTCT of HIV established in 2004 Provision of PMTCT of HIV services ratified by Regulations on Prevention and Treatment of HIV/AIDS (the State Council Decree No. 457) in 2006 China's Action Plan for Reducing and Preventing the Spread of HIV/AIDS (2006–2010) issued in 2006 PMTCT of HIV Monitoring and Evaluating Guidelines issued by the MOH in 2006 The Prevention of Mother-to-Child Transmission Management Online Information Direct Reporting System was activated in 2008 [4] PMTCT of HIV was included in the Major Program of Public Health Services by the MOH in 2009 Central government funding gradually increased 82.66 million Yuan and PMTCT of HIV program expanded to 453 counties in 2009 [4] National guidelines for the management of HIV control programs issued by the MOH in 2010, indicating: <ul style="list-style-type: none"> • the coverage of 1156 county-level divisions in all provinces • the provision of integrated HIV, syphilis, and hepatitis B testing for over 80% of all pregnant women before 2015 • the provision of free treatment for at least 90% of the infected mothers and their infants before 2015
2006–2010	China 2010–2020 Plan for Syphilis Control and Prevention issued by the MOH in 2010	

of HIV), along with the UN General Assembly Special Session (UNGASS) on HIV/AIDS, committed countries to a reduction in the proportion of infants infected with HIV by 50% by 2010 by ensuring that 80% of pregnant women have access to PMTCT of HIV services. All countries, including China, were also committed to reporting on progress [4]. The Global AIDS Reporting Mechanism has had considerable impact on countries' accountability for HIV and has thus served as a powerful instrument to exert influence over state norms for action [15].

On the contrary, MTCT of syphilis enjoyed no such high-level commitment from the international community or expectations for national action. It was not until 2007 that the WHO issued an action plan, *The Global Elimination of Congenital Syphilis: Rationale and Strategy for Action* [2], and in contrast to PMTCT of HIV, there was no global reporting instrument, let alone one that reported to the UN General Assembly.

3.2. International support

International financial and technical assistance can also influence national agenda-setting by enticing and enabling governments to undertake particular activities or reallocate national funds [16]. AIDS has been a funding priority for China's international development partners since the late 1990s, and UNAIDS established its office in Beijing in 1996. The total budgeted international support increased to 421 million Yuan in 2004 [7]. The central government's attention to HIV control was also motivated by participation in collaborative activities with international agencies and donors [7]. From 2002, international partners, particularly the UNICEF and the Global Fund to Fight AIDS, Tuberculosis and Malaria, provided technical and financial support to PMTCT programs. In contrast, the government received no financial support from any of the international agencies for PMTCT of syphilis.

3.3. Policy community cohesion and leading institutions

Policy communities are networks of actors from different types of organizations (bureaucracies, legislatures, NGOs, academia, etc) committed to a common cause [17]. Policy communities for both PMTCT of HIV and syphilis have existed in China for more than a decade, however, they have differed in their degree of cohesion and the effectiveness of leadership.

In the early 2000s, a group composed of the Division of Women and Children's Health in the MOH, UNICEF, and the National Center for Women and Children's Health (NCWCH), as well as clinicians and academics, was active in policymaking for PMTCT of HIV. This community coalesced into a tight network, transforming international norms and knowledge-based authority into political influence and pushing the central government to act. Members of the community were active in influencing and drafting the national guidelines. The MOH appointed the NCWCH as the leading institution and assigned clear responsibilities and accountabilities for each participating sector/actor.

In contrast, no equivalent cohesive policy community emerged for PMTCT of syphilis. Experts had no formal mechanism through which to interact and around which to coalesce, and there was no clear institutional leadership. As a result, implementation of antenatal syphilis screening largely depended on single institutions and individual professionals and lacked a clear accountability mechanism. According to officials from the National Center for STD Control (NCSTD) and the NCWCH, both institutions had tried to place PMTCT of syphilis into the national health agenda. Nevertheless, since the two centers are under the authority of different divisions of the MOH and had limited communication during policy advocacy, their efforts were neither unified nor influential.

3.4. Credible indicators

Agenda-setting scholars have demonstrated that the availability of clear indicators constitutes an important factor that shapes whether

an issue will generate the attention of decision-makers [11]. In 1997, the first HIV sentinel site for pregnant women was established, followed by the establishment of a network of national and provincial sentinel sites [4,13]. Additional attention to MTCT of HIV was generated by studies in Henan Province, which suggested a higher than expected prevalence (30% to 38%) of HIV among infants born to women living with HIV [13]. Using this evidence, PMTCT of HIV policy community compelled the MOH to take action and, in 2002, the first PMTCT of HIV program was piloted in Henan [8].

However, despite the national sexually transmitted diseases (STDs) surveillance program reporting a significant increase in incidence of syphilis from 1991 onward [1], PMTCT-syphilis was neither publicized nor highlighted in any report from the MOH or central government. National health policymakers were neither aware of the crisis nor motivated to take action. It was not until 2007, with the publication of national surveillance data in *The Lancet*, that China's significant burden of MTCT of syphilis became widely known to national officials [1].

3.5. Focusing events

Focusing events, such as crises, major scientific discoveries, or conferences can be influential in setting agendas by attracting visibility and attention from broad audiences to hitherto relatively hidden issues [18]. The most important focusing event for HIV in China is known internationally as the "blood selling" scandal [19], during which hundreds of thousands of rural Chinese in the central provinces were infected with HIV through blood selling in the 1990s. From 2000 onward, an increase in international media attention toward the scandal and the resultant "AIDS villages," combined with pressure from national scientists and health workers, resulted in HIV being placed higher on the national health agenda [19].

The 2001 UNGASS Declaration of Commitment on HIV/AIDS was the first major global focusing event for PMTCT of HIV [4]. By signing the Declaration, China's central government deemed the international commitments, including commitment to PMTCT of HIV, as legitimate and worthy of compliance [15]. Soon thereafter, the State Council issued the China Action Plan on HIV/AIDS Containment and Prevention (2001–2005) [8], which indicated the national government's commitment to delivering PMTCT-HIV services.

The publication of national surveillance data in *The Lancet* may have helped place PMTCT of syphilis on China's health policy agenda. From 2007 to 2009, a plan of action for the elimination of MTCT of syphilis in China was prepared by the NCWCH, with technical support from the WHO and inputs from external experts; nevertheless, this was not approved by the MOH. In 2010, a publication in the *New England Journal of Medicine* revealed the country's increasing incidence of MTCT of syphilis and stated that "in 2008, an average of more than one baby per hour was born with congenital syphilis in China, for a total of 9,480 cases" [20]. This was quickly cited by western media outlets [21]. According to interviewees from the NCSTD, national health officials believed that publication in a leading medical journal and western mainstream media would "largely affect China's image in international society specifically because it was released on the eve of the opening of Expo 2010 in Shanghai." This may have provided the impetus for the two relevant MOH divisions to join forces to push the timetable forward so as to finalize the China 2010–2020 Plan for Syphilis Control and Prevention in June 2010 [9].

3.6. Feasible policy options

Policymakers are more likely to commit to tackling a problem if they are convinced by proposals that demonstrate the problem to be readily solvable [11]. A large body of international and national evidence regarding the feasibility of PMTCT of HIV programs was available to Chinese policymakers [6,22]. On the basis of experiences gained from the Henan pilot, the central government perceived that PMTCT of HIV

was achievable in China, and made the relevant provisions in its annual budget planning [13]. On the contrary, according to several informants, since most PMTCT of syphilis pilot programs were initiated in economically developed areas where both financial support from local governments and human resources were relatively sufficient, the interventions were not seen as generalizable to other (less economically developed) areas of the country.

3.7. National policy environment

Major political transitions and reforms alter political priorities by giving new leadership agenda-setting power and by changing the policymaking process [12]. In 2003, a change of national leadership and its shift of focus from purely economic growth to socioeconomic equality helped facilitate the generation of political priority for AIDS in China. The outbreak of SARS in the winter/spring 2002–2003 precipitated a critical review for the newly installed government of the effectiveness of the state's apparatus to control life- and economy-threatening infectious diseases, including HIV [8]. According to one informant, the review painted AIDS as a potential obstacle in the face of China's plan to achieve an all-round moderately prosperous ("Xiaokang") society. Consequently, the national response to AIDS became significantly more public and aggressive, and was accompanied by increased government investment in infectious disease control [8]. Former Premier Wen Jiabao's visit to AIDS patients at Ditan Hospital, Beijing, on World AIDS Day in December 2003 exemplified the intense political attention from the highest level of government [7]. Not long thereafter, in February 2004, the State Council Working Group on AIDS was established and included 20 ministry members [7]. In contrast, the new leadership did not use the opportunity to include MTCT of syphilis on the health agenda.

3.8. Framing of issues

Beyond Shiffman's framework, we found evidence of an important dynamic facilitating political attention: issue framing. In China, "AIDS politics" were introduced during the first national conference on HIV prevention in 2001. HIV was described as an epidemic with severe impacts on public health, economic development, social stability, and national security, and thus could only be solved "politically" [23]. One interviewee from the NCWCH expressed the view that, in the early 2000s, the central government started to shift its attention to AIDS because a large proportion of people infected, although seriously stigmatized, were deemed "innocent"—especially the women and infant "victims of the 'blood selling' scandal."

Syphilis was virtually eradicated in mainland China during the 1960s [1]. The return of syphilis from the late 1970s onward was interpreted as a consequence of increased levels of extramarital sex, commercial sex, homosexuality, and drug use [24], all of which are illegal and/or "immoral" in China. According to an informant from a local STD institution, "because STIs are closely related to sex work and drug use, which are linked with 'immorality,' 'self-abuse,' and 'guilt' due to the restrictions of China's traditional morals, significant stigma is attached to STD patients and officials tend to think of them as 'condemnable' and 'punishable' and therefore have been reluctant to admit and respond to the resurgent epidemic." Several informants further attributed the low policy priority to the framing of syphilis as "a disease without severe symptoms and can be easily cured by cheap drugs."

4. Conclusions

In the 2000s, MTCT of syphilis remained low on China's health policy agenda despite published evidence of high incidence and highly cost-effective interventions. In contrast, MTCT of HIV, despite lower burden of disease, occupied a prominent position. Our comparative analysis indicates that pressure from the international community, including

establishment of specific and powerful norms, as well as provision of financial and technical support, had a major impact on the priority placed on MTCT of HIV. The central government decided to combat the HIV epidemic as a response to both international expectations of state behavior and local evidence of the impact of infectious disease epidemics (such as SARS) on population health and socioeconomic development. The shame brought by the blood selling scandal resulted in AIDS being considered a "political disease," calling for action from highest political levels. Decision-makers tended to portray HIV patients as victims of the selling blood scandal. A strong and cohesive policy community succeeded in lobbying for political attention and concomitant resource allocation to address MTCT of HIV. Credible indicators were employed to show the severity of its burden, focusing events generated political attention at both national and local levels, and a clear policy proposal convinced policymakers that the problem was surmountable.

In contrast, the lack of national political attention on MTCT of syphilis reflected the relative neglect of the disease at a global level. The absence of a lead institution and lack of a unified and vocal policy community further set back the cause of PMTCT of syphilis. Political efforts to tackle syphilis were restricted by Chinese traditional ideas of linkage between STDs and immorality and criminality. In 2007, with public revelations of a shockingly high incidence of MTCT of syphilis in the international academic press and the media, China's policymakers were prompted to take action.

Integrating syphilis screening into an existing antenatal HIV screening program in China can be substantially more cost-effective than HIV screening alone [25]. In 2010, China made a commitment to the dual elimination of MTCT of HIV and syphilis, providing an important opportunity for the MTCT of syphilis to be prioritized in policy and resource allocation at national and subnational levels. Our findings demonstrate the importance of understanding political and policy contexts in moving toward goals of dual elimination. We found that empirical and technical evidence of the burden of disease associated with MTCT of syphilis did not translate into political priority and resource allocation. National action on MTCT of HIV, with its lower burden and less cost-effective intervention, was spurred by a combination of political framing, strong national policy communities, credible epidemiological indicators, clear policy proposals, media pressure, existence of a global institutional framework with resources for country support, and global monitoring and accountability mechanisms.

Maintaining political commitment to dual control at national and subnational levels will require a nuanced framing of these two infections as being essentially, linked—in terms of underlying risk and vulnerability, as well as regarding the ease and feasibility of available solutions. A dual elimination goal will only be reached when policymakers and program managers at both national and subnational levels are convinced not only of the burden of preventable diseases, but also of the inherent imperative of conquering two infections simultaneously. This will require the MTCT of syphilis policy community to have a stronger leadership, and also work closely with the MTCT of HIV policy community at provincial level and below to correspondingly enhance prioritization of MTCT of syphilis on the local health agendas.

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Conflict of interest

The authors declare that they have no conflicts of interest.

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