

PREVENTION AND TREATMENT OF HIV AND OTHER SEXUALLY
TRANSMITTED INFECTIONS FOR SEX WORKERS IN LOW- AND
MIDDLE-INCOME COUNTRIES

Recommendations for a public health approach

December 2012



**PREVENTION AND TREATMENT OF HIV AND OTHER SEXUALLY
TRANSMITTED INFECTIONS FOR SEX WORKERS IN LOW- AND
MIDDLE-INCOME COUNTRIES**

Recommendations for a public health approach

December 2012

WHO Library Cataloguing-in-Publication Data

Prevention and treatment of HIV and other sexually transmitted infections for sex workers in low- and middle-income countries: recommendations for a public health approach.

1.Prostitution. 2.HIV infections - prevention and control. 3.Sexually transmitted infections – prevention and control. 4.Sexual partners. 5.Unsafe sex. 6.Sexual behavior. 7.Developing countries. I.World Health Organization.

ISBN 978 92 4 150474 4

(NLM classification: WC 503.7)

© **World Health Organization 2012**

All rights reserved. Publications of the World Health Organization are available on the WHO web site (www.who.int) or can be purchased from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland, (tel.: +41 22 791 3264; fax: +41 22 791 4857; e-mail: bookorders@who.int).

Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to WHO Press through the WHO web site (http://www.who.int/about/licensing/copyright_form/en/index.html).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Layout by L'IV Com Sàrl, Villars-sous-Yens, Switzerland.

Printed by the WHO Document Production Services, Geneva, Switzerland.

CONTENTS

Acknowledgements	3
Acronyms and abbreviations	4
Executive summary	7
1. Introduction	10
1.1 Background	10
1.2 Rationale (why this document is needed)	11
1.3 Objectives and target audience	11
1.4 Definitions	12
1.5 Scope of the guidelines	12
2. Methodology and process	13
2.1 GRADE approach	13
2.2 Process	14
3. Good practice recommendations	16
3.1 Definition	16
3.2 Background	16
3.3 Good practice recommendations	17
4. Technical recommendations	19
4.1 Community empowerment	19
4.2 Condom promotion	22
4.3 Screening for asymptomatic STIs	24
4.4 Periodic presumptive treatment for STI	26
4.5 Voluntary counselling and testing for HIV	29
4.6 Antiretroviral therapy	32
4.7 Needle and syringe programmes	34
4.8 Vaccination for hepatitis B virus	35
5. Operational considerations	37
6. Research gaps and future adaptations of the guidelines	39
6.1 Community empowerment	39
6.2 STI screening	39
6.3 STI diagnosis and treatment	40
6.4 ART for prevention	40

7. Conclusion 41

References 42

Annexes:

- All annexes can be found on the internet at www.who.int/hiv/pub/guidelines/sex_worker/en/
- Annex 1: PICO questions and other recommendations
- Annex 2: Outcome frameworks
- Annex 3: Evidence profiles and decision tables
- Annex 4: Values and Preferences report
- Annex 5: Search strategies
- Annex 6: Evidence summaries

ACKNOWLEDGEMENTS

The contents of this guideline reflect the dedicated efforts of many experts who contributed their time and expertise.

National programme managers

Ministry of Health, Brazil: Ângela Pires Pinto and Marcia Rejane Colombo

Ministry of Health, Cote d'Ivoire: Marguerite Thiam-Niangoin

National AIDS Control Programme, Iran: Kianoush Kamali

National STD/AIDS Control Programme, Sri Lanka: C. D. Wickramasuriya

National Center for STD Control, China: Xiang-Sheng Chen

State Service on HIV/AIDS and Other Socially Dangerous Diseases, Ukraine:

Tetyana Aleksandrina

Researchers

Ashodaya Samithi, India: Sushena Reza-Paul

British Columbia Centre for Excellence in HIV/AIDS, Canada: Kate Shannon

Centre for Advocacy on Stigma and Marginalisation, India: Meena Seshu

Columbia University New York, USA: Joanne Csete

Erasmus University MC, the Netherlands: Richard Steen

Human Sciences Research Council, South Africa: Sean Jooste

Institute of Tropical Medicine, Belgium: Bea Vuylsteke

Johns Hopkins Bloomberg School of Public Health, USA: Caitlin Kennedy and

Deana Kerrigan

Sonagachi Research & Training Institute, India: Smarajit Jana

American University of Beirut, Lebanon: Elie Akl

UNAIDS Advisory Group on HIV and Sex Work, India: Nandinee Bandyopadhyay

University of Witwatersrand, South Africa: Mathew Chersich and Marlise Richter

Sex workers' representatives

African Sex Workers Alliance and WONETHA, Uganda: Kyomya Macklean

Asia Pacific Network of Sex Workers, Malaysia: Khartini Slamah

Asociacion en PRO Apoyo a Servidores, Mexico: Alejandra Gil Cuervo

Bar Hostess Empowerment and Support Programme, Kenya: Peninah Mwangi

Danaya So, Mali: Housnatou Tembely

Empower Foundation, Thailand: Chantiwipa Apisuk

Guyana Sex Work Coalition: Cracey Annatola Fernandes

Health Options for Young Men on HIV, AIDS and STIs, Kenya:

John Mukabaru Mathenge

Indonesia Sex Worker Organization, Indonesia: Pardamean Napitu

International Committee on the Rights of Sex Workers in Europe, France/UK:

Thierry Schaffauser

Movimiento de trabajadoras sexuales del Perú, Peru: Angela Villón Bustamente
Sex Workers' Rights and Advocacy Network, Hungary: Marianne Bodzsar
The Global Network of Sex Work Project: Anna-Louise Crago (Canada), Andrew Hunter
(Thailand), and Ruth Morgan Thomas (UK)
Ukrainian League Legalife, Ukraine: Nataliia Isaeva
Veshya Anyay Mukti Parishad, India: Shabana Dastagir Goundi

Development partners

Bill and Melinda Gates Foundation, USA: Tisha Wheeler
The Global Fund to fight AIDS, TB and Malaria, Switzerland: Tonya Nyagiro
United States Agency for International Development, USA: Clancy Broxton

External peer reviewers

Ashodaya Samithi, India: Sushena Reza-Paul
Bill and Melinda Gates Foundation, USA: Gina Dallabetta
National AIDS Programme, Thailand: Petchsri Sirirund
Public health consultant, Mexico: Fernando Zacarias
Public health consultant, Thailand: Graham Neilsen

UN agencies

UNAIDS Headquarters: Els Klinkert, Susan Timberlake and Alison Crocket
UNDP Headquarters: Susana Fried
UNFPA Headquarters: Jenny Butler
UNFPA Asia Pacific Regional Office: Chaiyos Kunanusont
UNFPA Eastern Europe and Central Asia Regional Office: Tim Sladden
UNFPA Thailand Country Office: Taweessap Siraprapasiri

World Health Organization

WHO Headquarters: Avni Amin, Rachel Baggaley, Nicolas Clark, Jesus Maria Garcia-Calleja, Antonio Carlos Gerbase, Gottfried Hirsenschall, Ying-Ru Lo, Manjula Lusti-Narasimhan, Francis Ndowa, Lori Newman, Kevin O'Reilly, Michelle Rodolph, Igor Toskin, Annette Verster and Marco Vitoria
WHO Regional Office for Africa: Innocent Ntaganira and Frank Lule
WHO Regional Office for Europe: Brenda José Van den Bergh
WHO Regional Office for South-East Asia: Iyanthi Abeyewickreme
WHO Regional Office for the Western Pacific: Pengfei Zhao

Overall coordination

Rachel Baggaley, Antonio Carlos Gerbase, Ying-Ru Lo and Annette Verster of the Department of HIV/AIDS, WHO and Jenny Butler, UNFPA

This draft was written by Bea Vuylsteke and finalized by Rachel Baggaley, Jenny Butler, Alison Crocket, Antonio Gerbase, Ying-Ru Lo, Ruth Morgan Thomas, Michelle Rodolph and Annette Verster. Copy editing was done by Bandana Malhotra.

Funding and declarations of interest

The development of these guidelines was supported by the Deutsche Gesellschaft für International Zusammenarbeit (GIZ), Federal Ministry for Economic Cooperation and Development of Germany, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the UNFPA. Declarations of interest were collected from every member of each guidelines working group. Eleven potential conflicts of interest were declared. The WHO Secretariat assessed these declared conflicts of interest and determined that they were not sufficient to preclude these eleven participants from participating in the development of the guidelines.

ACRONYMS AND ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral
CI	Confidence interval
<i>C. trachomatis/CT</i>	<i>Chlamydia trachomatis</i>
ELISA	Enzyme-linked immunosorbent assay
GC	Gonococcus
GDG	Guidelines Development Working Group
GIZ	Deutsche Gesellschaft für International Zusammenarbeit
Global Fund	Global Fund to fight AIDS, Tuberculosis and Malaria
GRADE	Grading of Recommendations Assessment, Development and Evaluation
GRC	Guidelines Review Committee
GUD	Genital ulcer disease
HAART	Highly active antiretroviral therapy
HBV	Hepatitis B virus
HIV	Human immunodeficiency virus
mhGAP	Mental Health Gap Action Programme
<i>N. gonorrhoeae</i>	<i>Neisseria gonorrhoeae</i>
NAAT	Nucleic acid amplification test
NGO	Nongovernmental organization
NSWP	Network of Sex Work Projects
OR	Odds ratio
PCR	Polymerase chain reaction
PICO	Population, Intervention, Comparison and Outcome
RCT	Randomized controlled trial
PMTCT	Prevention of mother-to-child transmission
RPR	Rapid plasma reagin
RR	Relative risk, risk ratio or rate ratio
STI	Sexually transmitted infection
TPHA	<i>Treponema pallidum</i> haemagglutination (test)
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
VCT	Voluntary counselling and testing
VDRL	Venereal Disease Research Laboratory
WHO	World Health Organization

EXECUTIVE SUMMARY

Sex workers in many places are highly vulnerable to HIV and other sexually transmitted infections due to multiple factors, including large numbers of sex partners, unsafe working conditions and barriers to the negotiation of consistent condom use. Moreover, sex workers often have little control over these factors because of social marginalization and criminalized work environments. Alcohol, drug use and violence in some settings may further exacerbate their vulnerability and risk.

Acquisition of HIV and other STIs are important occupational hazards of sex work. Clients can infect sex workers who may transmit infection to other clients and from them to their sex partners. Preventing infection among sex workers thus has the potential to both improve the health of individual sex workers as well as to slow HIV and STI transmission among wider populations. Early interventions in countries as diverse as Brazil, India, Kenya and Thailand have succeeded reducing STI transmission in sex work by increasing condom use, leading to improved health outcomes for sex workers and rapid control of HIV and STI epidemics.

The objective of this document is to provide technical recommendations on effective interventions for the prevention and treatment of HIV and other STIs among sex workers and their clients. The guidelines are designed for use by national public health officials and managers of HIV/AIDS and STI programmes, nongovernmental organizations including community and civil society organizations, and health workers. Regions and countries are encouraged to adapt these guidelines to support acceptable services for sex workers taking into account the epidemiological and social context. These guidelines may also be of interest to international funding agencies, the scientific media, health policy-makers and advocates.

WHO led the development of the guidelines in collaboration with the United Nations Population Fund and the Joint United Nations Programme on HIV/AIDS. The Grading of Recommendations, Assessment, Development and Evaluation methodology was followed to ensure a structured, explicit and transparent approach to assessing the evidence and building consensus on the recommendations. Three independent researchers conducted systematic reviews and rated the quality of evidence related to (1) sex worker empowerment, (2) STI screening and (3) periodic presumptive treatment of STIs. Systematic reviews or related guidelines were available for other questions, including condom use, voluntary counselling and testing, antiretroviral therapy, needle–syringe programming and vaccination for hepatitis B virus. GRADE evidence profiles were developed to summarize the quality and strength of evidence for each question. The Network of Sex Work Projects conducted a qualitative survey on sex worker values and preferences related to the interventions being considered in the guidelines.

The recommendations are summarized below. These include evidence-based recommendations following the GRADE methodology as well as recommendations for good practice.

- Good practice recommendations are overarching principles derived not from scientific evidence but from common sense, ethics and human rights principles. These recommendations did not go through a formal GRADE process but should be strongly promoted in all interventions with sex workers.
- The technical recommendations are supported not only by scientific evidence but also the lived experience of sex workers around the world as expressed in the results of a community values and preferences survey and at the guideline consensus meeting.

SUMMARY OF RECOMMENDATIONS

Good practice recommendations

1. All countries should work toward decriminalization of sex work and elimination of the unjust application of non-criminal laws and regulations against sex workers.[†]
2. Governments should establish antidiscrimination and other rights-respecting laws to protect against discrimination and violence, and other violations of rights faced by sex workers in order to realize their human rights and reduce their vulnerability to HIV infection and the impact of AIDS. Antidiscrimination laws and regulations should guarantee sex workers' right to social, health and financial services.
3. Health services should be made available, accessible and acceptable to sex workers based on the principles of avoidance of stigma, non-discrimination and the right to health.
4. Violence against sex workers is a risk factor for HIV and must be prevented and addressed in partnership with sex workers and sex worker led organizations.

[†] See the Report of the Global Commission on HIV and the Law: Risks, Rights & Health, July 2012; Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, A/HRC/14/20, 2010; UNAIDS Guidance Note on HIV and Sex Work, 2012.

Evidence-based recommendations

1. We recommend a package of interventions to enhance community empowerment among sex workers.
(strong recommendation, very low quality of evidence)
2. We recommend correct and consistent condom use among sex workers and their clients.
(strong recommendation, moderate quality of evidence)
3. We suggest offering periodic screening for asymptomatic STIs to female sex workers.
(conditional recommendation, low quality of evidence)
4. We suggest offering female sex workers, in settings with high prevalence and limited clinical services, periodic presumptive treatment for asymptomatic STIs.
(conditional recommendation, moderate-to-high quality of evidence)
5. We recommend offering voluntary HIV testing and counselling to sex workers.
(in line with existing WHO guidance)
6. We recommend using the current WHO guidance on the use of antiretroviral therapy for HIV infection in adults and adolescents for sex workers living with HIV.
(in line with existing WHO guidance)
7. We recommend using the current WHO recommendations on harm reduction for sex workers who inject drugs.
(in line with existing WHO guidance)
8. We recommend including sex workers as targets of catch-up HBV immunization strategies in settings where infant immunization has not reached full coverage.
(in line with existing WHO guidance)

1. INTRODUCTION

1.1 Background

Sex workers are among the key populations most affected by HIV since the beginning of the epidemic. As early as in 1985, 62% of female sex workers in Nairobi, Kenya, were found to be HIV infected (1) and in 1988 in Kinshasa, Democratic Republic of the Congo, 35% of “femmes libres” tested positive for HIV (2). In the late 1980s and early 1990s, HIV prevalence rates as high as 88% and 89% were found among female sex workers in Butare, Rwanda and Abidjan, Côte d'Ivoire, respectively (3,4). Recently, a study conducted in the same sex worker clinic in Abidjan revealed an HIV prevalence of 50% among male sex workers (5).

According to data reported between 2007 and 2011, the overall HIV prevalence among female sex workers in all regions is 11.8% with notable variation by region, reflective of the background rates of HIV. The highest prevalence of HIV was in sub-Saharan Africa (36.9%), followed by Eastern Europe (10.9%), Latin America and the Caribbean (6.1%), and Asia (5.2%); the lowest rate was in the Middle East and North Africa (1.7%) (6). In concentrated as well as in generalized epidemics, HIV prevalence has been found to be considerably higher among sex workers compared to people in the general population (6–9).

The lifetime probability of a sex worker becoming infected with HIV is higher than among people in the general population, due to multiple risk factors, including multiple sexual partners, unsafe working conditions, barriers to negotiating consistent condom use, lack of access to appropriate lubricants, high prevalence of sexually transmitted infections (STIs) and sharing of injecting equipment. A recent study shows that female sex workers are 13.5 times more likely to acquire HIV than all other women aged 15–49 years, including in high HIV-prevalence countries (9). In addition, sex workers are often not in a position to control these risk factors, because of the environment and context in which they live and work (10,11). For these reasons, sex workers have been considered a key population with whom it is essential to work if the epidemic is to be stopped (12,13).

With high rates of partner change and unsafe work environments, sex workers are frequently exposed to infection and are at high risk for HIV acquisition, which may be transmitted to clients, including those who are highly mobile. Such clients can, in turn, disseminate infection more widely to other sexual partners.

Different levels of financial security and diverse work settings and conditions affect sex workers' autonomy and ability to protect their own health (14). In many settings, stigma and discrimination, criminalization, violence, financial need and debt, and exploitation further contribute to the vulnerability of sex workers (15–19). Therefore, it is important to understand the contexts within which sex work occurs, the power structures surrounding it, and sex workers' broader health and social needs when designing sex worker interventions.

Effective interventions with sex workers are an important component of comprehensive HIV prevention and treatment strategies. There is ample evidence that targeted HIV prevention programmes to reduce transmission of HIV/STI infection among sex workers are feasible and effective (4,20–25). Many of these programmes, however, have had a limited impact on HIV transmission dynamics simply because they are implemented on such a small and localized scale that most sex workers are not reached by them. In addition, some groups are often completely ignored, such as male and transgender sex workers. Addressing this “prevention gap” is one of the major challenges to HIV prevention among sex workers (26).

WHO has released guidance on the use of PrEP in sero-discordant couples and men who have sex with men. To date, there is no WHO recommendation on the use of oral pre-exposure prophylaxis (PrEP) for sex workers (27).

1.2 Rationale (why this document is needed)

Interventions to reduce the transmission of HIV among sex workers and their clients are recognized as an essential part of HIV programming. Global experience suggests that a few elements are common to all effective sex worker interventions (11,26). However, guidance on what constitutes effective HIV programming in the context of sex work remains scarce.

This gap is a major impediment to scaling up interventions with sex workers, as called for in universal access targets. In the absence of globally recognized guidelines and standards, countries aiming to initiate HIV programmes in the context of sex work must improvise, often “reinventing the wheel”. Five years ago, the HIV Department of the World Health Organization (WHO) attempted to address this gap by publishing the *HIV/AIDS sex work toolkit*, an annotated compilation of known guidelines and training materials from different regions (28). In the light of new experience and the need for evidence, countries have requested WHO and the Joint United Nations Programme on AIDS (UNAIDS) to develop evidence-based guidance for designing, implementing and monitoring effective HIV and STI prevention and treatment interventions among female, male and transgender sex workers.

1.3 Objectives and target audience

The objective of this document is to provide technical recommendations on the prevention and treatment of HIV and other STIs among sex workers and their clients. The guidelines are designed for use by national public health officials and managers of HIV/AIDS and STI programmes, nongovernmental organizations (NGOs), including community and civil society organizations, and health workers. These guidelines may also be of interest to international funding agencies, the scientific media, health policy-makers and advocates.

1.4 Definitions

Sex workers include “female, male and transgender adults and young people (18 years of age and above) who receive money or goods in exchange for sexual services, either regularly or occasionally” (19). It is important to note that sex work is consensual sex between adults, which takes many forms, and varies between and within countries and communities. Sex work may vary in the degree to which it is more or less “formal” or organized.

1.5 Scope of the guidelines

These guidelines include technical recommendations for designing a basic package of health interventions and services for the prevention and treatment of HIV and other STIs among sex workers and their clients. Although the focus of the guidance is on low- and middle-income countries, they may be applicable to sex workers in high-income countries as well.

Effective HIV prevention requires the scaling up of multiple interventions that work synergistically to achieve the maximum impact. “Scaling up” HIV prevention means ensuring that an appropriate mix of evidence-based prevention strategies achieves a sufficient level of coverage, uptake, intensity and duration to have an optimal public health effect (26). However, there is no “one size fits all” and programmes need to be tailored to local situations. While basic programme elements are similar, how and with what emphasis they are implemented may vary from country to country.

For these reasons, WHO and other UNAIDS Cosponsors are working with regional and country offices and partners (a) to disseminate these evidence-based global guidelines, and (b) to support regional and country adaptation with attention to operational considerations and implementation methods appropriate to the local context of sex work and capacity of health systems.

2. METHODOLOGY AND PROCESS

2.1 GRADE approach

WHO follows the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach for the development and review of recommendations. This approach is increasingly being adopted by organizations worldwide for rating the quality of evidence and strength of recommendations (29). GRADE emphasizes a structured, explicit and transparent approach to grading and consensus building (29).

GRADE separates the rating of the quality of evidence from the grading of the recommendation.

Quality of evidence

In the context of recommendations, quality reflects the confidence that the estimates of effect are adequate to support a particular recommendation (30). The GRADE system classifies the quality of evidence into one of four levels: high, moderate, low and very low. Rating of the quality of evidence is first done by outcome before an overall assessment is made. Rating of the quality of evidence based on randomized controlled trials (RCTs) starts as high, but may be decreased for several reasons, including risk of bias, inconsistency of results, indirectness of evidence, imprecision and publication bias (31–35). Rating the quality of evidence based on observational studies starts as low, but may be increased if the magnitude of the treatment effect is very large, if there is evidence of a dose–response relationship or if all plausible biases would underestimate the effect (36).

Strength of recommendation

The strength of a recommendation reflects the extent to which we can be confident that the desirable effects of an intervention outweigh the undesirable effects (37). The GRADE system classifies recommendations into two strengths: “strong” and “conditional”. A recommendation can also be either in favour of or against the intervention of interest. As a result, there are four combinations of strength and direction for a recommendation:

- Strong in favour of the intervention
- Conditional in favour of the intervention
- Conditional against the intervention
- Strong against the intervention

The strength and direction of recommendations are affected by the following factors: the quality of evidence, balance of benefits and harms, values and preferences, resource use and feasibility of the intervention.

2.2 Process

The WHO Department of HIV/AIDS led the development of the guidelines under the oversight of the WHO Guideline Review Committee (GRC) in collaboration with WHO's Department of Reproductive Health and Research, the United Nations Population Fund (UNFPA), UNAIDS Secretariat and Global Network of Sex Work Projects (NSWP).

The process included the following different steps:

1. Identification of the Population, Intervention, Comparison and Outcome (PICO) questions

A Guideline Development Working Group (GDG) was formed and met in August 2010. The group consisted of two representatives from sex worker organizations (nominated by the NSWP), seven scientists and researchers, two programme managers, one implementing partner (United States Agency for International Development [USAID]) and UN staff dedicated to HIV/STI and sex work.

The group reviewed and agreed on the scope and structure of the guidelines. It identified the PICO questions of interest (Annex 1) and agreed on the outcome frameworks (Annex 2). The group also decided on the systematic reviews needed.

2. Conduct of systematic reviews and development of GRADE evidence tables

Three independent researchers conducted systematic reviews by following standard methodology. They searched all relevant electronic databases and selected eligible publications. The databases they searched included PubMed, PsycINFO, Sociological Abstracts, CINAHL (Cumulative Index to Nursing and Allied Health Literature), EMBASE, and MEDLINE. The search included articles in other languages with English abstracts. They meta-analysed data from eligible studies where possible, and rated the quality of evidence for each PICO question. Next, they created GRADE evidence profiles presenting the quantitative summary of the evidence and the assessment of its quality (Annex 3). In December 2010, a technical meeting was held in Baltimore, USA to monitor progress of the systematic reviews.

3. Values and preferences survey

The NSWP conducted a qualitative survey on sex workers' values and preferences, which was completed in October 2011 (38). A convenience sample of sex workers was taken from 33 countries across six regions. Participants were contacted through regional sex worker groups and sex work projects. All interviewees were part of local or national sex worker groups. Over 50 sex workers participated in the survey. Interviews were conducted in person, over the phone or, on a few occasions, by e-mail. In some countries, sex workers chose to give a collective answer. Interviews were conducted in English, French, Spanish, Russian,

Indonesian and in several other languages with the assistance of translators selected by the sex workers. The interviews were based on a semi-structured interview guide aimed at assessing preferences for the different interventions being considered in the guidelines. The results of this survey were presented at the consensus meeting. The full report and interview guide are available in Annex 4.

4. Formulation of recommendations

The Guidelines Consensus meeting to generate the final recommendations was convened in Montreux, Switzerland from 2 to 4 February 2012. The meeting was conducted over two-and-a-half days with approximately 60 participants from different regions, including seven programme managers, 17 sex worker representatives, 11 researchers and 18 UN representatives (12 WHO Secretariat, four UNFPA and two UNAIDS Secretariat). A drafting panel was established to write and oversee the final version of the guidelines.

For each PICO question, the reviewer or a member of the GDG presented the results of the systematic review, and the assessment of factors that affected the recommendation, including quality of evidence, balance of benefits and harms, sex workers' values and preferences, and resource use. For PICO questions with no new systematic literature review, previous reviews and summary tables and/or existing guidelines were presented. The panel also discussed the good practice recommendations. A consensus was reached on all the recommendations, and on the conditionality to be attached to the recommendations.

A draft version of the guidance, agreed upon during the Guidelines Consensus meeting, was circulated for feedback among the drafting panel, which was composed of members of the GDG, sex workers who had taken part in the consensus meeting and external peer reviewers. The coordinators of the process incorporated comments from internal and external peer reviewers to finalize the guidelines. Complete details of the systematic reviews and all other annexes are available online at http://www.who.int/hiv/pub/guidelines/sex_worker/en/.

3. GOOD PRACTICE RECOMMENDATIONS

3.1 Definition

Good practice recommendations are overarching principles derived not from scientific evidence but from common sense, ethics and human rights principles. These recommendations did not go through a formal GRADE process.

3.2 Background

Like all human beings, sex workers are entitled to the full protection of their human rights, as specified in international human rights instruments (39,40). Human rights include the rights to non-discrimination; security of person and privacy; recognition and equality before the law; due process of law and the highest attainable standard of health; employment, and just and favourable conditions of employment; peaceful assembly and association; freedom from arbitrary arrest and detention, and from cruel and inhumane treatment; and protection from violence (41).

Sex workers are essential partners and leaders in effective HIV and sexual health programmes, and for developing solutions that respond to the realities of the environments in which they live and work. Laws that directly or indirectly criminalize or penalize sex workers, their clients and third parties, and abusive law enforcement practices, stigma and discrimination related to HIV and sex work can undermine the effectiveness of HIV and sexual health programmes, and limit the ability of sex workers and their clients to seek and benefit from these programmes (41,42). Of particular concern is violence perpetrated against sex workers, as well as repressive police practices, including harassment, extortion, arbitrary arrest and detention, and physical and sexual violence. Also of concern are health-care settings where there is stigma, discrimination and denial of health care to sex workers. Since sex worker-led organizations are crucial for enabling sex workers to protect themselves from discrimination, coercion and violence, measures that prevent them from assembling and organizing themselves are also of significant concern.

Attention and resources are needed to prevent, address, report and redress violence against sex workers, especially by supporting sex workers' individual and collective self-organization and self-determination.

The promotion of a legal and social environment that protects human rights and ensures access to information, services and commodities related to HIV prevention, treatment, care and support, without discrimination, is essential for achieving an effective and rights-based response to the HIV epidemic and promoting public health, including in the context of sex work.

3.3 Good practice recommendations

Recommendation 1

All countries should work toward decriminalization of sex work and elimination of the unjust application of non-criminal laws and regulations against sex workers (19,43,101).*

Implications

- The police practice of using possession of condoms as evidence of sex work and grounds for arrest of sex workers should be eliminated.
- The wide latitude of the police to arrest and detain sex workers without cause, including the use of public order statutes to prevent sex workers from being in public spaces and police extortion should be eliminated.
- The fear and stigma faced by sex workers should be reduced, thereby facilitating them to seek and utilize health and other services.

Recommendation 2

Governments should establish laws to protect against discrimination and violence, and other violations of rights faced by sex workers in order to realize their human rights and reduce their vulnerability to HIV infection and the impact of AIDS.† Antidiscrimination laws and regulations should guarantee sex workers' right to social, health and financial services (41).

Implications

- Policy-makers, parliamentarians, religious leaders and other public figures should work together with civil society and sex workers' organizations to confront stigma, discrimination and violence against sex workers, and transform punitive legal and social norms and practices that stigmatize and marginalize sex workers towards ones that protect the rights of sex workers. Representatives of UN agencies should do everything possible to support these national processes.
- Programmes should be put in place to provide legal literacy and legal services to sex workers so that they know their rights and applicable laws, and can be supported to access the justice system when aggrieved.

* See the Report of the Global Commission on HIV and the Law: Risks, Rights & Health, July 2012; Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, A/HRC/14/20, 2010; UNAIDS Guidance Note on HIV and Sex Work, 2012.

† See *International Guidelines on HIV/AIDS and Human Rights*, Guideline 5, para.22: "States should enact or strengthen anti-discrimination and other protective laws that protect vulnerable groups, people living with HIV and people with disabilities from discrimination in both the public and private sectors, that will ensure privacy and confidentiality and ethics in research involving human subjects, emphasize education and conciliation and provide for speedy and effective administrative and civil remedies."

Recommendation 3

Health services should be made available, accessible and acceptable to sex workers based on the principles of avoidance of stigma, non-discrimination and the right to health.

Implications

- Decriminalization of sex work should reduce stigma. Complementary actions should be undertaken to reduce stigma related to HIV and sex work in health-care settings and communities.
- Programmes should be put in place to sensitize and educate health-care providers on non-discrimination and sex workers' right to high-quality and non-coercive care, confidentiality and informed consent.
- Sex workers' groups and organizations should be made essential partners and leaders in designing, planning, implementing and evaluating health services.
- Essential health services for sex workers must include universal access to male and female condoms and lubricants, as well as access to comprehensive sexual and reproductive health services, and equitable access to all available health-care services including primary health care.

Recommendation 4

Violence against sex workers is a risk factor for HIV and must be prevented and addressed in partnership with sex workers and sex worker led organizations.

Implications

- Violence against sex workers needs to be monitored and reported, and redressal mechanisms established to provide justice to sex workers.
- Law enforcement officials, and health and social care providers need to be trained to recognize and uphold the human rights of sex workers, and held accountable if they violate the rights of sex workers, including the perpetration of violence.
- Support services need to be provided to sex workers who experience violence.

4. TECHNICAL RECOMMENDATIONS

4.1 Community empowerment

Background

Sex workers are frequently exposed to HIV and other STIs, and have multiple risks for infection, including multiple sexual partners, barriers to the negotiation of consistent condom use and high STI prevalence (6,14). In addition, sex workers are often not in a position to control these risk factors, because of the legal, political and social environment, and the context they live and work in, making them vulnerable to HIV and STIs (15).

Programmes exclusively targeting the individual risk of sex workers or their clients are likely to have a limited impact. Environmental–structural interventions, such as community empowerment aimed at reducing the vulnerability of sex workers, may enable sex workers to have greater control over their working conditions and thereby control their risk of acquiring infection (19,26,44–47). Community empowerment is a collective process through which the structural constraints to health, human rights and well-being are addressed by sex workers to create social and behavioural changes, and access to health services to reduce the risk of acquiring HIV. The interventions delivered through a community empowerment model include, but are not limited to, sustained engagement with local sex workers to raise awareness about sex worker rights, establishment of community led drop-in centres, formation of collectives that determine range of services to be provided, as well as outreach and advocacy. Further information can be found in the evidence summary in Annex 6.1. Community empowerment interventions seek to create a safe space, utilizing solidarity and collective efficacy to advocate for increased power and control in society, and to challenge power structures that deny that group control and justice (48,49).

Available evidence

A systematic review was conducted to determine the effects of community empowerment on the outcomes of interest – HIV- and STI-associated morbidity and mortality (see outcome framework for prevention interventions in Annex 2). Empowerment was defined as a social-action process that promotes the participation of people, organizations and communities towards the goals of increased individual and community control, political efficacy, improved quality of community life and social justice (49). A total of 10 studies were included in the review.

Overall, positive trends were found regarding the impact of community empowerment-based interventions with sex workers on HIV-related outcomes. (For details, see tables of evidence in Annex 3.)

1. Reduction in HIV prevalence

Three studies measured HIV infection as an outcome, and only the two studies with short follow up (mean 2.5 years) showed a statistically significant reduction in the prevalence of infection (odds ratio [OR] 0.84).

2. Reduction in STI prevalence

Six studies measured one or a combination of STI outcomes. One study showed a statistically significant reduction in the combined prevalence of *N. gonorrhoeae* (gonorrhoea) and *C. trachomatis* (chlamydial infection) from baseline to 12-month follow up (OR 0.51). Four studies showed a statistically significant reduction in gonorrhoea prevalence (OR 0.65) over a mean follow up of two years. Four studies measuring the prevalence of chlamydial infection and four studies measuring syphilis outcome did show a positive effect of community empowerment; however, this effect was not statistically significant.

3. Increase in condom use

Condom use was measured in nine studies with different study designs. Community empowerment was associated with a significant increase in condom use with clients (OR 1.96–5.87).

Quality of evidence

The overall evidence of the effect of community empowerment on HIV and HIV-related outcomes is of very low quality. Among the 10 studies included in the quantitative synthesis, there was one labelled RCT, one longitudinal and eight cross-sectional studies. The RCT had randomized only one site to each arm, and thus lacked the ability to control for confounding. Indeed, the study had statistically significant differences in important baseline characteristics such as marital status, knowledge of at least one HIV prevention method and condom use. The quality was further compromised by the lack of blinding and lack of reporting on attrition. Combining this with the indirectness of outcome (reported condom use), it was felt that the study provided low-quality evidence. The longitudinal study suffered from serious risk of bias because over half the participants were lost to follow up at one year. Seven of the eight cross-sectional studies suffered from risk of bias.

Balance of benefits and harms

The benefits of community empowerment are high and outweigh the harms. These are listed in the evidence summary [Annex 6.1]. No harms were identified in the outcomes assessed in this analysis. While community empowerment is considered an important outcome by itself, we did not identify any study addressing community empowerment that can be assessed by the GRADE methodology. Additional information is available in the decision table [Annex 3.1b].

Acceptability (values and preferences)

Collective empowerment was seen as an absolutely necessary component for improving the living and working conditions of sex workers, developing sex worker-led strategies for health and rights interventions, and redressing human rights violations. In response to questions about how to support sex workers in protecting their health, respondents frequently alluded

to the connections between individual and collective rights, and power over working and living conditions (38).

Feasibility and resource use

Community empowerment interventions with sex workers have proven feasible in diverse settings. Community empowerment requires human and financial resources.

Additional points of discussion

The concept of community empowerment has many interpretations and therefore its assessment is complex and difficult (48). One should consider the different components of community empowerment and the practical approaches to it, which are currently not standardized and may be very different in different settings. In addition, RCTs are not suitable for answering questions about the effectiveness of interventions, because causal chains between sex worker intervention and health impact are complex, and can be affected by numerous characteristics of the population, health system or environment (50). Community empowerment was unanimously endorsed by participants at the consensus meeting. These included national programme managers, academic researchers, donor agency representatives and sex workers who did not participate in the values and preferences survey. The strength of this recommendation is strong because the benefits are high, there are no harms and requires minimal resources.

Recommendation

We recommend a package of interventions to enhance community empowerment among sex workers.

Strong recommendation, very low quality of evidence

Remarks:

- The interventions delivered through a community empowerment model include, but are not limited to, sustained engagement with local sex workers to raise awareness about sex worker rights, establishment of community led drop-in centres, formation of collectives that determine range of services to be provided, as well as outreach and advocacy.
- Community empowerment is a necessary component of sex worker interventions and should be led by sex workers.
- The benefits are high, there are no harms and the required resources are relatively low.

4.2 Condom promotion

Background

For a long time, condoms were the only method known for preventing sexual transmission of HIV. Their use has been recommended to prevent HIV infection since the mid-1980s. For condoms to work against acquiring HIV, they must be used correctly and consistently. Many factors, including who uses them, with which partners, and how consistently and correctly they do so, determine their public health impact (51).

Condom programmes, including community-led approaches, have been successful in increasing condom use within commercial sex. These have been associated with very high levels of reported condom use and declining STI and HIV prevalence in many settings in Africa, Asia and Latin America (4,24,52).

A water-soluble lubricant should be used to alleviate the many unpleasant side effects of frequent condom use experienced by sex workers and their clients. The use of inappropriate lubricants that damage condoms should be reduced. In a study from Thailand, approximately 95% of sex workers expressed an interest in using water-soluble lubricants on a regular basis, explaining that this reduced the time clients took to ejaculate, reduced vaginal pain and discomfort, as well as condom breakage (53). Lubricants are also promoted for anal sex, and are particularly important for male and transgender sex workers in reducing the risk of lesions, thereby reducing the risk of HIV transmission. Availability and promotion of female and male condoms and lubricants go hand in hand with HIV prevention messages.

Although evidence of its effectiveness in preventing HIV is not readily available, the female condom has been promoted as an alternative to the male condom since 1994, and could potentially enhance women's capacity to protect themselves during sex. Studies with sex workers have documented increased protection levels with the addition of the female condom to male condom distribution systems (54,55).

Available evidence

Evidence is based on a Cochrane review that examined the effectiveness of the male condom in reducing heterosexual HIV transmission (56). Thirteen cohorts of "always users" and ten cohorts of "never users" among serodiscordant heterosexual couples were compared and yielded a risk ratio (RR) of 0.17. Since no new evidence has emerged since this Cochrane review was published in 2009, the guideline development group did not feel the need to undertake an additional systematic review.

Quality of evidence

All included studies were observational but found a very large effect. The overall evidence was rated as moderate. There is no reason to suspect that the effectiveness of condom use by sex workers and clients might be different from that by the general population.

Balance of benefits and harms

The benefits of condom use outweigh its risks. The overall effectiveness of condom use was 82.9% when always users were compared with never users. Quality-of-life considerations were not studied.

Acceptability (values and preferences)

Respondents of the NSW survey unanimously supported condom promotion and distribution to sex workers. All sex workers wished for greater availability of male condoms, particularly in sex work settings. Some respondents spoke of the poor quality or unpleasant smell of the male condoms that were available for free. Female condoms were generally unavailable or too expensive to be affordable. Respondents emphasized the need for distribution of water-based lubricants to accompany condom promotion (38).

Feasibility and resource use

There is programmatic evidence from low- and middle-income settings that condom promotion and condom use is feasible. Male condoms are inexpensive.

Recommendation

We recommend correct and consistent condom use among sex workers and their clients.

Strong recommendation, moderate quality of evidence

Remarks:

- Condom programming should be free from coercion.
- Possession of condoms should not be used as evidence of sex work-related criminal activity.
- Water-based lubricant gel should be offered along with condoms.

4.3 Screening for asymptomatic STIs

Background

STIs are a concern not only because of the discomfort resulting from the acute infection but also because they are more likely to be asymptomatic or go undetected in women than in men. This results in delayed treatment and hence a higher prevalence, and can lead to the development of serious complications, including cervical cancer and pelvic inflammatory disease with resulting infertility, chronic pain, ectopic pregnancy and related maternal mortality (57).[‡]

Therefore, one should not wait for symptoms to develop, especially in female sex workers. Screening with laboratory tests for treatable STIs, following risk of exposure or at pre-specified intervals aims to identify and treat asymptomatic infections that would otherwise not be detected (11). For those with STI symptoms, the panel referred to the 2003 WHO *Guidelines for the management of sexually transmitted infections*, which are being updated (58).

Available evidence

A systematic review was conducted to determine whether screening of female sex workers for STIs using laboratory tests is effective in reducing the prevalence or incidence of STIs. A total of 10 studies were included in the systematic review. Overall, positive trends regarding the impact of STI screening were found on STI prevalence and incidence. (For details, see tables of evidence in Annex 3.)

1. Syphilis

Syphilis screening was done using rapid tests such as the rapid plasma reagin (RPR) or Venereal Disease Research Laboratory (VDRL) tests. Four studies with three-monthly screening found a decline in the prevalence of syphilis (RR not available). One study with six-monthly screening did not detect a reduction in the prevalence of syphilis.

2. Gonorrhoea

Nine studies were located, which used a range of screening tests, from visualization of the cervix to endocervical culture. Screening was associated with a decrease in gonorrhoea (RR 0.77), although this was not statistically significant.

3. Chlamydial infection

Nine studies were located, which used a range of screening tests, from visualization of the cervix to immune assay for chlamydial infection. Eight studies found either initial or long-term reduction in the rates of chlamydial infection.

[‡] Note: these guidelines do not address screening for human papillomavirus (HPV) and cervical cancer, which are addressed in other guidelines.

4. Trichomoniasis

After screening with a simple wet mount test, short-term reductions in *Trichomonas* infection were observed in most of the nine studies identified; however, the reductions were not sustained in the long term.

Quality of evidence

The overall evidence of the effect of screening female sex workers on reducing the incidence of STIs is of low quality. Among the 10 studies included in the quantitative synthesis, there was one RCT and nine longitudinal studies. The RCT was rated down for serious limitations in design and imprecision. Most of the studies were observational and did not have external control groups. Significant confounding was likely, as screening was only one of the interventions delivered in the studies.

Balance of benefits and harms

The benefits of screening female sex workers for STI probably outweigh its risks. A rapid decline and consistent reductions in the prevalence of syphilis, gonorrhoea and chlamydial infection were observed. Marked inconsistency was noted regarding the benefits of screening for trichomoniasis. Broader benefits of STI screening include prevention of complications and transmission, increased opportunities for counselling and partner notification. Potential adverse effects were not reported in the studies (false-positive results and discrimination).

Acceptability

Respondents of the NSWP values and preferences survey expressed unanimous support for periodic voluntary screening for STIs (38). In a workshop in Madagascar, female sex workers requested voluntary routine serological screening for syphilis and a speculum examination (59).

Feasibility and resource use

Syphilis testing with simple tests such as RPR or the rapid test has minimum laboratory requirements and is widely available. Screening for gonorrhoea, chlamydial infection and trichomoniasis, however, require new point-of-care tests that are sophisticated and expensive, such as polymerase chain reaction (PCR). These tests are not available in most low- and middle-income countries.

Additional points of discussion

Screening tests used in the reviewed studies included visualization of the cervix, white blood cell count on microscopy of the cervical smear and endocervical culture. None of these tests have a high sensitivity for detecting gonorrhoea and chlamydial infection (60,61). Using new and more sensitive tests, such as the nucleic acid amplification tests (NAAT), would probably have resulted in a greater effect of screening. It must be stressed, however, that NAAT are expensive and not available in most settings in low- and middle-income countries.

Recommendation

We suggest offering periodic screening for asymptomatic STIs to female sex workers.

Conditional recommendation, low quality of evidence

Remarks:

- STI testing should not be coercive or mandatory.
- Syphilis screening requires minimal training and laboratory equipment, and is inexpensive. Quality control is essential.
- Screening for gonorrhoea and chlamydial infection currently involves sophisticated and very costly tests.
- STI screening should be part of a package of comprehensive prevention and STI care services.

4.4 Periodic presumptive treatment for STI

Background

Effective treatment for most bacterial STIs with safe, single-dose antibiotics is available and affordable in most settings. However, as discussed under STI screening (see section 4.3), most STIs in women are asymptomatic and accurate screening tests are expensive and rarely available in low- and middle-income settings (62). For these reasons, PPT has been used for sex workers to reduce their large burden of predominantly undetected infection (63). PPT is defined as the treatment of curable STIs based on sex workers' high risk for acquiring infection and its prevalence, rather than on symptoms, signs or results of laboratory tests (62). PPT could be seen as being similar to presumptive treatment of symptomatic women based on a risk assessment, or of identified sex partners of STI index cases.

Available evidence

A systematic review was conducted to determine whether PPT in female sex workers is effective in reducing the prevalence or incidence of STIs. The results showed consistent reductions in STI prevalence. (For details, see tables of evidence in Annex 3.) A total of 12 studies were retained for analysis. All but one of the studies used 1 gram azithromycin (single dose), alone or in combination with another antibiotic. Treatment frequency was variable, from once monthly to once every 3–6 months.

- Reduction in the prevalence of gonorrhoea
All studies on gonorrhoea showed a significant decrease in prevalence. The RR was 0.46 in one published RCT.

- Reduction in the prevalence of chlamydial infection
All but one study on chlamydial infection showed a significant decrease in prevalence. The RR was 0.38 in one published RCT.
- Reduction in the prevalence of genital ulcers
Observational studies showed a decrease in the prevalence of genital ulcers in female sex workers (RR=0.23) and in male clients (RR=0.21).
- Effect of PPT on condom use
An increased or same level of condom use was reported following PPT in eight studies, and a non-significant decrease in one study.

Quality of evidence

The overall quality of evidence of the effects of PPT was moderate to high. Among the 12 studies analysed, two were RCTs and four were adjusted cross-sectional studies. Those studies where the quality of evidence was high used PPT as part of more comprehensive sexual health service. The quality of evidence was high for gonorrhoea and chlamydial infection. The quality of evidence was moderate for syphilis, HIV and for genital ulcer disease (observational studies with large effect size).

Balance of benefits and harms

The benefits of PPT outweigh the risks of such an intervention. A reduction was observed in all STIs except for syphilis. In situations where the prevalence of STIs was high, larger effects of PPT were found.

Potential harms of PPT are related to the use of antibiotics, and risk compensation due to a decreased level of condom use. Mild gastrointestinal side effects of antibiotics were noticed when using PPT in some studies. The emergence in *N. gonorrhoeae* of decreased susceptibility and resistance to the cephalosporins is a cause for concern (64). There were no reports on the development of antibiotic resistance associated with the provision of PPT in the systematic reviews. Finally, an increased or same level of condom use was reported in eight studies and a non-significant decrease in one study.

Acceptability (values and preferences)

The NSW values and preferences survey concluded that the potential risks to sex workers of PPT outweigh the potential benefits. Sex workers reported harmful consequences from the introduction and use of PPT (38). Consensus was reached on the utilization of PPT only under the strictest of conditions and in circumstances where sex workers must have access to all relevant information in order to make an informed decision. Further, PPT must be offered only if its uptake is voluntary, not imposed as part of a coercive or mandatory public health regime.

There was unanimous agreement from the survey and meeting participants that PPT should be

- offered only while comprehensive sexual health services (including screening, treatment and care) are being further developed;
- as part of a comprehensive package of HIV and STI prevention, treatment and care interventions, which include community empowerment, targeted interventions for clients and condom promotion.

It was also requested that there should be on-going monitoring of the possible harms that sex workers could experience from taking PPT, and that they should be fully informed about PPT and its side effects.

Feasibility and resource use

Including PPT as a component of STI services for sex workers has proven feasible in diverse settings (62). The feasibility of implementing combined interventions including PPT on a large scale, with high coverage and utilization by sex workers, has been demonstrated by the Avahan India AIDS Initiative (65). PPT is not resource intensive, as it does not require large human and financial resources. Azithromycin and cefixime can be given together in a single dose and procured at a price of less than one US dollar in many settings.

Additional points of discussion

PPT should be implemented only as a short-term emergency measure where STI prevalence is high e.g. above 15%, to be phased out as soon as possible, e.g. after six months, even if prevalence has not declined, as other measures should have been put in place to maintain control. Related operational considerations include

- the development of appropriate and comprehensive sexual health services in collaboration with sex workers;
- the use of single-dose combination antibiotics for high cure rates;
- enhanced condom promotion, including ensuring quality and accessibility to reduce rates of reinfection;
- enhanced sex worker-led outreach to increase knowledge, coverage and utilization of services;
- enhanced support for safer working conditions to increase opportunities for condom negotiation; and
- use of PPT only with these other components to reinforce STI control and HIV prevention with sex workers and their clients (66).

Recommendation

We suggest offering female sex workers, in settings with high prevalence and limited clinical services, periodic presumptive treatment for asymptomatic STIs.

Conditional recommendation, moderate-to-high quality of evidence

Remarks

1. PPT should be implemented only as a short-term measure in settings where STI prevalence is high e.g. >15% prevalence of *N. gonorrhoeae* and/or *C. trachomatis* infection
2. PPT for gonorrhoea and chlamydial infection should always be free, voluntary, confidential, and include counselling and informed consent.
3. PPT for gonorrhoea and chlamydial infection should only be offered as part of comprehensive sexual health services (including community empowerment, condom programming, STI screening, STI treatment and care) and while HIV/STI services are being further developed.
4. There should be ongoing monitoring of the possible benefits and harms that sex workers could experience from being offered PPT.

4.5 Voluntary counselling and testing for HIV

Background

Voluntary counselling and testing is an integral component of HIV prevention and care strategies worldwide. By combining personalized counselling with knowledge of one's HIV status, voluntary counselling and testing may help motivate people to change their behaviours to prevent transmission of the virus (67). It not only allows people to make informed choices about their lives but it also allows them to access treatment, prevention and care services. Knowing their HIV status may motivate sex workers to change or to keep to safe sex behaviour, and sex workers living with HIV may access supportive counselling, treatment for opportunistic infections and antiretroviral therapy (ART).

WHO guidelines on HIV counselling and testing

The following WHO guidelines on HIV counselling and testing have been developed for different settings:

Guidance on provider-initiated HIV testing and counselling in health facilities, 2007 (68).

WHO and UNAIDS Secretariat strongly support the continued scale up of client-initiated HIV

testing and counselling but recognize the need for additional innovative and varied approaches. Health facilities represent a key point of contact for people with HIV who are in need of HIV prevention, treatment, care and support. Evidence from both industrialized and resource-constrained settings suggest that many opportunities to diagnose and counsel individuals at health facilities are being missed and that provider-initiated HIV testing and counselling facilitates diagnosis and access to HIV-related services. Concerns about the potential coercion of patients, breach of medical records and adverse outcomes of disclosure underscore the importance of adequate training for and supervision of health-care providers, and the need for close monitoring and evaluation of provider-initiated HIV testing and counselling programmes.

Delivering HIV test results and messages for re-testing and counselling in adults, 2010 (69). People may continue to engage in high-risk practices (and become infected after completing an HIV test) or engage in a high-risk sexual event within three months prior to an HIV test (and experience an acute infection that yields a negative result from the HIV antibody test). Therefore, current WHO guidance recommends that individuals should be asked to retest after six weeks and then at least annually.

Guidance on couples HIV testing and counselling and antiretroviral therapy for treatment and prevention in serodiscordant couples, 2012 (70).

These guidelines recommend increasing the offer of voluntary HIV testing and counselling to couples and partners, with support for mutual disclosure. They also recommend offering ART for HIV prevention in serodiscordant couples.

Prerequisites for HIV testing and counselling

It is essential that HIV testing and counselling adhere to the basic tenets of self-determination, privacy, informed decision-making and protection. The same critical principles should be followed, whether HIV testing is done for sex workers or for the general population:

- Utilization of voluntary testing services
Mandatory or coerced testing is never appropriate, whether that coercion comes from legislation, a health-care provider or from a partner or family member.
- Consent
Persons receiving HIV testing must give informed consent to be tested and counselled.
- Confidentiality
HIV testing and counselling and testing services are confidential, meaning that the discussion between the health-care provider and the client(s) will not be disclosed to anyone else without the expressed consent of the client or both partners in a couple (in case of couples testing).

- **Counselling**
HIV testing and counselling services must be accompanied by appropriate and high-quality pre-test information and post-test counselling. Quality assurance mechanisms and supportive supervision systems should be in place to ensure the provision of high-quality counselling.
- **Correct test results**
Providers of HIV testing and counselling should strive to offer high-quality testing services. Quality assurance mechanisms should be in place to ensure the provision of correct test results to the person tested. Quality assurance may include both internal and external measures, and should include support from the national reference laboratory as needed.
- **Links to services**
HIV testing and counselling includes the provision of effective referrals to appropriate follow-up services (e.g. ART, prevention of mother-to-child transmission [PMTCT]) as indicated, including long-term prevention and treatment support.

Acceptability (values and preferences)

Respondents of the survey and meeting participants unanimously expressed overwhelming disapproval of mandatory or coercive testing (38). In many countries, mandatory testing was reported to be used by the police as a threat to increase extortion and control over sex workers. Results are often given to third parties, including sex business managers and outreach staff. Many respondents stressed that for ART to be more widely available to sex workers, more sex workers need to know their status, which requires HIV testing services that are trusted by and accessible to sex workers.

Recommendation

We recommend offering voluntary HIV testing and counselling to sex workers.

In line with existing WHO guidance

Remarks

- HIV testing should be free, voluntary, confidential, and include counselling and informed consent.
- HIV testing should be linked to HIV services.

4.6 Antiretroviral therapy

Background

Advances in HIV treatment have resulted in substantial increases in the longevity and quality of life of people living with HIV in developed countries (71). Although pilot studies have demonstrated the clinical feasibility and effectiveness of highly active antiretroviral therapy (HAART) in a wide range of countries, including Cameroon, Côte d'Ivoire, India, Kenya, Malawi, Senegal, South Africa and Uganda (72–74), access to ART in resource-poor settings is limited. Recently, the prospects for expanded access to ART in resource-poor settings have greatly improved as a result of global and national efforts to reduce the cost of antiretroviral (ARV) drugs, growing availability of cheaper generics, and increased financing available from the Global Fund to fight AIDS, Tuberculosis and Malaria (Global Fund), the US President's Emergency Plan For AIDS Relief (PEPFAR) and others (74). This improved access has raised hopes that many lives can be saved (75).

In general, sex workers face greater challenges than the general population to retention in care and adherence to treatment because of stigma and discrimination in health-care settings, and their mobility, which may be motivated by many reasons such as avoiding harassment from the police, brothel owners as well as looking for clients (76). However, providing ART to sex workers is feasible and is as effective as in the general population. Studies have shown that clinical and biological outcomes, such as increasing CD4 counts, can be maintained in sex workers (77).

In addition to the individual sex worker's benefit, providing ART to sex workers has the potential for making a huge impact on the AIDS epidemic. This is because HIV-infected sex workers have many sexual partners and are involved in extensive sexual networks, so it may be possible to reduce the risk of sexual transmission to others in the community by significantly reducing their HIV viral load through effective provision of ART (78).

WHO guidelines for ART

WHO guidelines on ART for HIV infection in adults and adolescents were originally published in 2002, and revised in 2003 and 2006. New evidence formed the basis for the revised recommendations contained in the 2010 guidelines. The process was based on the preparation of GRADE profiles, systematic and targeted reviews, risk–benefit analyses, technical reports, and assessment of impact, feasibility and cost (79). WHO is developing consolidated guidelines on the use of ART for release in 2013.

The four key messages in the 2010 guidelines can be summarized as follows:

1. Start ART earlier: use ART before the patient becomes sick, starting when the CD4 count is less than or equal to 350 cells/mm³. Previous guidelines recommended starting ART when the CD4 count was less than or equal to 200 cells/mm³.
2. Use less toxic and more patient-friendly options: reduce the risk of adverse events by using less toxic drugs and improve adherence by the use of fixed-dose combinations.
3. Improve the management of TB/HIV and hepatitis B/HIV coinfections: start ART in all HIV-infected persons who have active TB and chronic active hepatitis B, irrespective of the CD4 cell count.
4. Promote the strategic use of laboratory monitoring: use laboratory monitoring such as CD4 and viral load measurement to improve the efficacy and quality of HIV treatment and care.

Specific considerations for sex workers on ART

The principles for ART use, including what and when to start, are the same for all HIV-infected populations. As a consequence, the clinical management of HIV-positive sex workers should not differ from that for other populations and does not have special requirements. Thus, there is no need for any additional specific systematic review and evidence check.

There might be some issues concerning more frequent co-morbidities (such as STIs, hepatitis), potential pharmacological interactions (due to the concomitant use of legal and illicit drugs), concurrent substance use treatment (such as methadone maintenance therapy), lack of continuity of care and treatment interruptions (due to imprisonment, migration). Caregivers should be alert to these conditions and handle them according to existing guidelines.

The issue of access to and availability of treatment for sex workers is a human rights issue and is included in the key recommendations section.

Acceptability (values and preferences)

Respondents of the NSWP sex worker consultations supported the same ART protocols as for other HIV-infected adults (38). A great deal of emphasis was placed on the need for universally accessible treatment, including access to treatment for migrants and those without legal documents.

Recommendation

We recommend using the current WHO guidance on the use of antiretroviral therapy for HIV infection in adults and adolescents for sex workers living with HIV.

In line with existing WHO guidance

Remarks

1. It is not the issue of efficacy but of equitable access to ART which is important for sex workers.
2. ART for HIV-infected sex workers should be available as part of a comprehensive care and support approach.

4.7 Needle and syringe programmes

Background

In some geographical areas, sharing injecting equipment is a more important route of HIV transmission among sex workers than unprotected sex. In Asia, Europe, North America and Latin America, there is a substantial overlap between injecting drug use and sex work. In many settings, the prevalence of HIV among sex workers who inject drugs is significantly higher than among sex workers who do not (80–84). In addition to the risk of acquiring HIV by sharing injecting equipment, one study in Viet Nam showed that drug-using sex workers were about half as likely to use condoms as those who did not use drugs (85).

Existing guidelines

Evidence for action technical papers: Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users. 2004 (86).

This publication, together with other Evidence for action technical papers (including those on opioid substitution therapy, peer outreach, ART), aims to make the evidence for the effectiveness of selected key interventions in preventing HIV transmission among injecting drug users accessible to a policy-making and programming audience. The interventions reviewed range from providing information and sterile injection equipment to the impact of drug dependence treatment on HIV prevention. Each publication summarizes the published literature and discusses implications for programming with a particular focus on resource-limited settings.

WHO, UNODC, UNAIDS *Technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users – 2012 Revision*. 2012 (87).

This document provides technical guidance to countries on setting ambitious but achievable national targets for scaling up towards universal access to HIV/AIDS prevention, treatment and care for injecting drug users.

This technical guide provides countries with:

- a framework and process to set national targets
- a comprehensive package of core interventions for injecting drug users
- a set of indicators and indicative targets (or “benchmarks”) to be used to set programmatic objectives, and monitor and evaluate HIV interventions for injecting drug users
- examples of data sources.

Recommendation

We recommend using the current WHO recommendations on harm reduction for sex workers who inject drugs.

In line with existing WHO guidance

4.8 Vaccination for hepatitis B virus

Background

More than 400 million people worldwide are chronically infected with HBV. The virus is responsible for more than 300 000 cases of liver cancer every year, accounting for 82% of cases of liver cancer worldwide (88). HBV is transmitted between people by contact with the blood or other body fluids of an infected person (89). Sexual contact and injecting drug use can also transmit the virus. Risky sexual practices and sex work are associated with HBV infection in different regions of the world (90–92). Tests for HBV were found to be positive in 22.0% of male, 40.2% of transgender and 51.6% of female sex workers in different studies (92,93). Fortunately, highly effective vaccines against the virus are available (94).

Existing guidelines

WHO position paper on hepatitis B vaccines. (2009) (95).

Hepatitis B vaccine is 95% effective in preventing HBV infection and its chronic consequences. Current hepatitis B vaccines use recombinant DNA technology and are safe. Three doses are

necessary for complete immunization and protection against potential HBV infection according to the WHO position paper on hepatitis B vaccines (2009) (95). WHO has also published guidance on prevention of viral hepatitis among people who inject drugs (96).

Recommendation

We recommend including sex workers as targets of catch-up HBV immunization strategies in settings where infant immunization has not reached full coverage.

In line with existing WHO guidance

5. OPERATIONAL CONSIDERATIONS

Each of the technical recommendations assessed, if implemented well following “good practice”, can strengthen interventions with sex workers and contribute to reducing the transmission of HIV and other STIs. However, how great an impact they have often depends on a range of operational factors, as well as on the underlying structural conditions that affect sex work. Planned operational guidelines will address these in more detail.

The most successful interventions with sex workers have combined multiple components – implemented with strong community involvement and backed by supportive policies – to maximize positive outcomes. Whether beginning with condom promotion policies at the national level or community-led outreach services, such programmes build on combinations of sex worker-led interventions, condom programming and clinical services recommended in these guidelines. With experience, many programmes have found ways to increase the participation of sex workers, resulting in more comprehensive programmes that respond to sex workers’ needs, as well as more enabling environments in the context of HIV prevention and sex work.

One of the most important operational considerations is reaching the population and building trust and confidence in the services offered. In some cases, early sex worker-led interventions have grown into strong community-based responses that have successfully addressed the structural conditions of vulnerability in sex work. Community-led interventions are a powerful tool that can bring about individual behaviour change and create a supportive environment for practising safe sex. Community-led outreach programmes have been found to increase HIV knowledge, condom use and safer sex behaviours among sex workers in various settings (4,47,48,97). Community empowerment is a sex worker-led process that involves collective action around challenging power structures that deny sex workers access to social and material resources, including but not limited to HIV and health-related services.

Sex workers need accessible, acceptable and good-quality medical care at all levels, which may be provided through a variety of channels such as sex worker-led services including clinical services, harm reduction and drug treatment services, and integrated services at sexual and reproductive and primary health-care centres. Whichever model is used, important characteristics include an accessible and suitable location, convenient opening times, affordable or free health care, confidentiality and a non-judgemental attitude of service providers (98,99). Promotion of clinic services in the community, and strengthening behaviour change and condom promotion messages in the clinic further contribute to the prevention–care synergy.

The policy environment and structural factors are also critical. Outreach, condom programmes and clinical services are key interventions but their effectiveness may be limited if they are implemented within hostile or repressive environments. Programmes that have succeeded in

making “structural” changes to improve conditions where sex work takes place have achieved some of the most impressive HIV/STI prevention results. These changes include (a) enabling condom use in sex work establishments, and (b) reducing the levels of discrimination, harassment and violence that hinder sex workers from accessing services and participating actively in programmes. Policies promoting these changes and endorsed at high political levels greatly facilitate programme implementation and national scale up.

6. RESEARCH GAPS AND FUTURE ADAPTATIONS OF THE GUIDELINES

Perhaps the highest priority for research is to operationalize recommendations for different settings. Intervention-linked operational research should thus be part of the process of adaptation and implementation of guidelines.

The present guidelines are based on PICO questions developed in 2010. As the evidence base for HIV-related interventions is continuously increasing, new knowledge and resulting public health strategies may arise. This may lead to new PICO questions that should be addressed in future reviews and adaptations of the guidelines. In addition, systematic reviews conducted for the present guidelines have revealed important gaps in evidence that we present below. Future research should be directed at filling these gaps.

6.1 Community empowerment

The definition of community empowerment is very broad and the different components are not well defined. There is a need for qualitative research in order to better characterize and understand community empowerment and how it differs from mobilization activities. There is also a need to develop and validate measurement instruments for community-level and individual-level empowerment-related outcomes.

The evidence for the effects of community empowerment on HIV prevention was judged to be of very low quality using the GRADE process. However, RCTs are not suited for answering these kinds of questions. More qualitative and descriptive studies should be conducted. Studies should also be conducted in diverse geographical locations. For example, the majority of the included studies in the current review were conducted in India and some in Latin America. There is a need for more studies in other regions of the world, including Asia and Africa.

Community empowerment is an important outcome in itself. Therefore, the impact of community empowerment on other health and rights outcomes should be further documented.

6.2 STI screening

Most of the research on and public health measures for STI screening and PPT have been conducted on women, because women are considered to be more likely to suffer from asymptomatic infections than men, and they carry a significant burden of untreated STIs and its complications. However, there is evidence that the proportion of asymptomatic STIs among men may be considerable (5,100). More research should be conducted on screening strategies for male and transgender sex workers.

6.3 STI diagnosis and treatment

For male sex workers and specifically for men who have sex with men, algorithms for the management of rectal STIs have been proposed but have not been validated. There is a need to develop and validate algorithms for the diagnosis of pharyngeal and rectal STIs (5). It should also be noted that women, including female sex workers, also engage in anal and oral sex, and this should be factored into future research.

The absence of affordable, simple and rapid point-of-care tests for chlamydial infection and gonorrhoea is one of the major obstacles to STI screening and diagnosis in both men and women. The development of affordable, simple and rapid point-of-care tests is considered to be an absolute priority in STI research by STI control programme managers and STI specialists.

6.4 ART for prevention

An RCT demonstrated that early ART reduces the sexual transmission of HIV in serodiscordant couples by more than 96% (78). The practical impact of these findings and their public health importance still need to be assessed. However, the impact of earlier treatment on sex workers and their partners could be considerable, but more research is needed on the effectiveness and operational aspects of such a strategy. WHO guidance on couples HIV testing and counselling recommends offering ART for HIV prevention in serodiscordant couples, including sex workers in a serodiscordant couple setting (70).

7. CONCLUSION

Sex workers are among the key populations most affected by HIV and STIs since the beginning of the epidemic. Effective interventions targeting sex workers are important components of comprehensive HIV and STI prevention strategies. However, guidance on what constitutes effective HIV programming in the context of sex work remains scarce.

These guidelines constitute the first evidence-based recommendations for designing, implementing and monitoring effective HIV and STI prevention and treatment interventions among female, male and transgender sex workers. They will form the backbone of practical implementation guides, which may differ for different settings.

A revision of the guidelines is planned for 2016, before which plans will be developed for quality evaluation of the guidelines, their usefulness and impact.

REFERENCES

1. Simonsen JN et al. HIV infection among lower socioeconomic strata prostitutes in Nairobi. *AIDS*, 1990, 4(2):139–144.
2. Nzila N et al. HIV and other sexually transmitted diseases among female prostitutes in Kinshasa. *AIDS*, 1991, 5(6):715–721.
3. Hunt CW. Migrant labor and sexually transmitted disease: AIDS in Africa. *Journal of Health and Social Behavior*, 1989, 30(4):353–373.
4. Ghys PD et al. Increase in condom use and decline in HIV and sexually transmitted diseases among female sex workers in Abidjan, Cote d'Ivoire, 1991–1998. *AIDS*, 2002, 16(2):251–258.
5. Vuylsteke B et al. High prevalence of HIV and sexually transmitted infections among male sex workers in Abidjan, Cote d'Ivoire: need for services tailored to their needs. *Sexually Transmitted Infections*, 2012, 11 February 2012; doi:10.1136/sextrans-2011-050276.
6. Baral S et al. Burden of HIV among female sex workers in low-income and middle-income countries: a systematic review and meta-analysis. *Lancet Infectious Diseases*, 15 March 2012; doi:10.1016/S1473-3099(12)70066-X.
7. Gragnic G et al. HIV-1 and HIV-2 seropositivity among female sex workers in the Tenere Desert, Niger. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 1998, 92(1):29.
8. Mgone CS et al. Human immunodeficiency virus and other sexually transmitted infections among female sex workers in two major cities in Papua New Guinea. *Sexually Transmitted Diseases*, 2002, 29(5):265–270.
9. Morison L et al. Commercial sex and the spread of HIV in four cities in sub-Saharan Africa. *AIDS*, 2001, 15 (Suppl 4):S61–S69.
10. Rekart ML. Sex-work harm reduction. *Lancet*, 2005, 366(9503):2123–2134.
11. Vuylsteke B. Preventing HIV among sex workers. In: Mayer K, Pizer HF, eds. *HIV prevention: a comprehensive approach*. Burlington, MA, Academic Press, 2009: 376–406.
12. Plummer FA et al. The importance of core groups in the epidemiology and control of HIV-1 infection. *AIDS*, 1991, 5:S169–S176.
13. Thomas JC, Tucker MJ. The development and use of the concept of a sexually transmitted disease core. *Journal of Infectious Diseases*, 1996, 174:S134–S143.
14. Harcourt C, Donovan B. The many faces of sex work. *Sexually Transmitted Infections*, 2005, 81(3):201–206.
15. Vanwesenbeeck I. Another decade of social scientific work on sex work: a review of research 1990–2000. *Annual Review of Sex Research*, 2001, 12:242–289.
16. UNAIDS. *Sex work and HIV/AIDS*. Geneva, Joint United Nations Programme on HIV/AIDS, 2002.
17. Platt L. *Profile of sex workers in Moscow*. Moscow, AIDS Infoshare, 1998.
18. Dehne KL et al. Update on the epidemics of HIV and other sexually transmitted infections in the newly independent states of the former Soviet Union. *AIDS*, 2000, 14 (Suppl 3):S75–S84.
19. UNAIDS. *Guidance note on HIV and sex work*. Geneva, UNAIDS, updated 2012. Available at: http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2009/JC2306_UNAIDS-guidance-note-HIV-sex-work_en.pdf (accessed on 06 June 2012).
20. Laga M et al. Condom promotion, sexually transmitted diseases treatment, and declining incidence of HIV-1 infection in female Zairian sex workers. *Lancet*, 1994, 344(8917):246–248.
21. Alary M et al. Decline in the prevalence of HIV and sexually transmitted diseases among female sex workers in Cotonou, Benin, 1993–1999. *AIDS*, 2002, 16(3):463–470.
22. Ghys PD et al. Effect of interventions to control sexually transmitted disease on the incidence of HIV infection in female sex workers. *AIDS*, 2001, 15(11):1421–1431.

23. Wi T et al. STI declines among sex workers and clients following outreach, one time presumptive treatment, and regular screening of sex workers in the Philippines. *Sexually Transmitted Infections*, 2006, 82(5):386–391.
24. Levine WC et al. Decline in sexually transmitted disease prevalence in female Bolivian sex workers: impact of an HIV prevention project. *AIDS*, 1998, 12(14):1899–1906.
25. Steen R et al. Evidence of declining STD prevalence in a South African mining community following a core-group intervention. *Sexually Transmitted Diseases*, 2000, 27(1):1–8.
26. Global HIV Prevention Working Group. *Bringing HIV prevention to scale: an urgent global priority*. June 2007. Available at: http://www.globalhivprevention.org/pdfs/PWG-HIV_prevention_report_FINAL.pdf (accessed on 06 June 2012).
27. WHO. *Guidance on oral pre-exposure prophylaxis for serodiscordant couples, men and transgender women who have sex with men at high risk of HIV*. Geneva, WHO, 2012. Available at http://www.who.int/hiv/pub/guidance_prep/en/ (accessed on 28 September 2012).
28. WHO. *HIV/AIDS sex work toolkit – targeted HIV/AIDS prevention and care in sex work settings*, Geneva, WHO, 2004. Available at: <http://who.arvkit.net/sw/en/contentdetail.jsp?ID=33&d=sw.00.03> (accessed on 06 June 2012).
29. Guyatt GH et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *British Medical Journal*, 2008, 336(7650):924–926.
30. Balshem H et al. GRADE guidelines: 3. Rating the quality of evidence. *Journal of Clinical Epidemiology*, 2011, 64(4):401–406.
31. Guyatt GH et al. GRADE guidelines: 4. Rating the quality of evidence – study limitations (risk of bias). *Journal of Clinical Epidemiology*, 2011, 64(4):407–415.
32. Guyatt GH et al. GRADE guidelines: 5. Rating the quality of evidence – publication bias. *Journal of Clinical Epidemiology*, 2011, 64(12):1277–1282.
33. Guyatt GH et al. GRADE guidelines: 6. Rating the quality of evidence – imprecision. *Journal of Clinical Epidemiology*, 2011, 64(12):1283–1293.
34. Guyatt GH et al. GRADE guidelines: 7. Rating the quality of evidence-inconsistency. *Journal of Clinical Epidemiology*, 2011, 64(12):1294–1302.
35. Guyatt GH et al. GRADE guidelines: 8. Rating the quality of evidence-indirectness. *Journal of Clinical Epidemiology*, 2011, 64(12):1303–1310.
36. Guyatt GH et al. GRADE guidelines: 9. Rating up the quality of evidence. *Journal of Clinical Epidemiology*, 2011, 64(12):1311–1316.
37. Guyatt GH et al. Going from evidence to recommendations. *British Medical Journal*, 2008, 336(7652):1049–1051.
38. Network of Sex Worker Projects. *Female, male and transgender sex workers' perspective on HIV and STI prevention and treatment services: a global sex worker consultation*. Edinburgh, NSWP, 2011. Available at: http://www.nswp.org/sites/nswp.org/files/NSWP-%20WHO%20Consultation%20Report%20updated_0.pdf (accessed on 04 July 2012).
39. United Nations. *The Universal Declaration of Human Rights*. 1948. Available at: <http://www.un.org/en/documents/udhr/> (accessed on 06 June 2012).
40. World Conference on Human Rights. *Vienna Declaration and Programme of Action*. Vienna, United Nations General Assembly, 12 July 1993 [A/CONF.157/23], as adopted by the (1993). Available at: [http://www.unhchr.ch/huridocda/huridoca.nsf/\(symbol\)/a.conf.157.23.en](http://www.unhchr.ch/huridocda/huridoca.nsf/(symbol)/a.conf.157.23.en) (accessed on 06 June 2012).
41. UNAIDS and OHCHR. *International guidelines on HIV/AIDS and human rights: 2006 consolidated version*. Geneva, UNAIDS, 2006 (HR/PUB/06/9).

42. OHCHR and WHO. *The right to health: fact sheet no. 31*. Geneva, WHO, 2008. Available at: <http://www.ohchr.org/Documents/Publications/Factsheet31.pdf> (accessed on 06 June 2012).
43. United Nations General Assembly. *Report of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of health, Anand Grover*. April 2010 (UN doc. no. A/HRC/14/20). Available at: <http://www2.ohchr.org/english/bodies/hrcouncil/docs/14session/A.HRC.14.20.pdf> (accessed on 06 June 2012).
44. Sweat MD, Denison JA. Reducing HIV incidence in developing countries with structural and environmental interventions. *AIDS*, 1995, 9 (Suppl A):S251–S257.
45. Sweat M et al. Cost-effectiveness of environmental–structural communication interventions for HIV prevention in the female sex industry in the Dominican Republic. *Journal of Health Communication*, 2006,11 (Suppl 2):123–142.
46. Blankenship KM, Bray SJ, Merson MH. Structural interventions in public health. *AIDS*, 2000, 14 (Suppl 1):S11–S21.
47. Kerrigan D et al. Environmental–structural interventions to reduce HIV/STI risk among female sex workers in the Dominican Republic. *American Journal of Public Health*, 2006, 96(1):120–125.
48. Laverack G, Wallerstein N. Measuring community empowerment: a fresh look at organizational domains. *Health Promotion International*, 2001, 16(2):179–185.
49. Wallerstein N. Powerlessness, empowerment, and health: implications for health promotion programs. *American Journal of Health Promotion*, 1992, 6(3):197–205.
50. Victora CG, Habicht JP, Bryce J. Evidence-based public health: moving beyond randomized trials. *American Journal of Public Health*, 2004, 94(3):400–405.
51. Hearst N, Chen S. Condom promotion for AIDS prevention in the developing world: is it working? *Studies in Family Planning*, 2004, 35(1):39–47.
52. Hanenberg RS et al. Impact of Thailand's HIV-control programme as indicated by the decline of sexually transmitted diseases. *Lancet*, 1994, 344(8917):243–245.
53. Rojanapithayakorn W, Goedken J. Lubrication use in condom promotion among commercial sex workers and their clients in Ratchaburi, Thailand. *Journal of the Medical Association of Thailand*, 1995, 78(7):350–354.
54. Fontanet AL et al. Protection against sexually transmitted diseases by granting sex workers in Thailand the choice of using the male or female condom: results from a randomized controlled trial. *AIDS*, 1998, 12(14):1851–1859.
55. Hoke TH et al. Temporal trends in sexually transmitted infection prevalence and condom use following introduction of the female condom to Madagascar sex workers. *International Journal of STD and AIDS*, 2007, 18(7):461–466.
56. Weller S, Davis K. Condom effectiveness in reducing heterosexual HIV transmission. *The Cochrane Library*, 2009; DOI: 10.1002/14651858.CD003255.
57. Wasserheit JN. The significance and scope of reproductive tract infections among Third World women. *International Journal of Gynecology and Obstetrics (Supplement)*, 1989, 3:145–168.
58. WHO. *Guidelines for the management of sexually transmitted infections*. Geneva, WHO, 2003. Available at: <http://whqlibdoc.who.int/publications/2003/9241546263.pdf> (accessed on 06 June 2012).
59. Behets FM et al. Evidence-based treatment guidelines for sexually transmitted infections developed with and for female sex workers. *Tropical Medicine and International Health*, 2003, 8(3):251–258.
60. Vuylsteke B et al. Clinical algorithms for the screening of women for gonococcal and chlamydial infection: evaluation of pregnant women and prostitutes in Zaire. *Clinical Infectious Diseases*, 1993, 17(1):82–88.
61. Sloan NL et al. Screening and syndromic approaches to identify gonorrhoea and chlamydial infection among women. *Studies in Family Planning*, 2000, 31(1):55–68.

62. Steen R et al. Periodic presumptive treatment of curable sexually transmitted infections among sex workers: a systematic review. *AIDS*, 2012, 26(4):437–445.
63. Steen R, Dallabetta G. Sexually transmitted infection control with sex workers: regular screening and presumptive treatment augment efforts to reduce risk and vulnerability. *Reproductive Health Matters*, 2003, 11(22):74–90.
64. WHO. *Global action plan to control the spread and impact of antimicrobial resistance in Neisseria gonorrhoeae*. Geneva, WHO, 2012. Available at: http://whqlibdoc.who.int/publications/2012/9789241503501_eng.pdf (accessed on 11 June 2012).
65. Das A et al. Prevalence and assessment of clinical management of sexually transmitted infections among female sex workers in two cities of India. *Infectious Diseases in Obstetrics and Gynecology*, 2011, 2011:494769.
66. Steen R, Chersich M, de Vlas SJ. Periodic presumptive treatment of curable sexually transmitted infections among sex workers: recent experience with implementation. *Current Opinion in Infectious Diseases*, 2012, 25(1):100–106.
67. Denison JA et al. HIV voluntary counseling and testing and behavioral risk reduction in developing countries: a meta-analysis, 1990–2005. *AIDS and Behavior*, 2008, 12(3):363–373.
68. WHO. *Guidance on provider-initiated HIV testing and counselling in health facilities*. Geneva, WHO, 2007. Available at: http://whqlibdoc.who.int/publications/2007/9789241595568_eng.pdf (accessed on 08 June 2012).
69. WHO. *Delivering HIV test results and messages for re-testing and counselling in adults*. Geneva, WHO, 2010. Available at: http://whqlibdoc.who.int/publications/2010/9789241599115_eng.pdf (accessed on 08 June 2012).
70. WHO. *Guidance on couples HIV testing and counselling and antiretroviral therapy for treatment and prevention in serodiscordant couples*. Geneva, WHO, 2012. Available at: http://whqlibdoc.who.int/publications/2012/9789241501972_eng.pdf (accessed on 08 June 2012).
71. Jacobson LP et al. Evaluation of the effectiveness of highly active antiretroviral therapy in persons with human immunodeficiency virus using biomarker-based equivalence of disease progression. *American Journal of Epidemiology*, 2002, 155(8):760–770.
72. Farmer P et al. Community-based approaches to HIV treatment in resource-poor settings. *Lancet*, 2001, 358(9279):404–409.
73. Kasper T et al. Demystifying antiretroviral therapy in resource poor settings. *Essential Drugs Monitor*, 2003, 32:20–21.
74. Attawell K, Mundy J. *Provision of antiretroviral therapy in resource-limited settings: a review of experience up to August 2003*. Report prepared by the Health Systems Resource Centre for the UK Department for International Development in collaboration with the World Health Organization. London, DFID, 2003.
75. WHO. *Global HIV/AIDS response. Epidemic update and health sector progress towards universal access: progress report 2011*. Geneva, WHO, 2011. Available at: http://whqlibdoc.who.int/publications/2011/9789241502986_eng.pdf (accessed on 06 June 2012).
76. Mills EJ et al. Adherence to HAART: a systematic review of developed and developing nation patient-reported barriers and facilitators. *PLoS Medicine*, 2006, 3(11):e438.
77. Huet C et al. Long-term virological, immunological and mortality outcomes in a cohort of HIV-infected female sex workers treated with highly active antiretroviral therapy in Africa. *BMC Public Health*, 2011, 11:700.
78. Cohen MS et al. Prevention of HIV-1 infection with early antiretroviral therapy. *New England Journal of Medicine*, 2011, 365(6):493–505.
79. WHO. *ART guidelines for adults and adolescents – evidence map*. Geneva, WHO, 2010. Available at: <http://www.who.int/hiv/topics/treatment/evidence/en/index.html> (accessed on 06 June 2012).

80. Chen XS et al. Sexually transmitted infections among female sex workers in Yunnan, China. *AIDS Patient Care and STDs*, 2005, 19(12):853–860.
81. Sethi G et al. HIV, sexually transmitted infections, and risk behaviours in male sex workers in London over a 10 year period. *Sexually Transmitted Infections*, 2006, 82(5):359–363.
82. Todd CS et al. Prevalence and correlates of human immunodeficiency virus infection among female sex workers in Tashkent, Uzbekistan. *Sexually Transmitted Diseases*, 2006, 33(8):496–501.
83. Tran TN et al. HIV infection and risk characteristics among female sex workers in Hanoi, Vietnam. *Journal of Acquired Immune Deficiency Syndromes*, 2005, 39(5):581–586.
84. Verster A et al. Prevalence of HIV infection and risk behaviour among street prostitutes in Rome, 1997–1998. *AIDS Care*, 2001, 13(3):367–372.
85. Monitoring the AIDS Pandemic Network. *Sex work and HIV/AIDS in Asia: MAP report*. 2005. Available at: http://aidsdatahub.org/dmdocuments/MAP_Report_2005_Sex_Work_and_HIVAIDS_in_Asia.pdf (accessed on 06 June 2012).
86. WHO. *Evidence for Action technical papers. Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users*. Geneva, WHO, 2004. Available at: http://www.who.int/hiv/pub/prev_care/effectivenesssterileneedle.pdf (accessed on 08 June 2012).
87. WHO, UNODC, UNAIDS. *Technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users – 2012 Revision*. Geneva, WHO, 2012.
88. Lee WM. Hepatitis B virus infection. *New England Journal of Medicine*, 1997, 337(24):1733–1745.
89. Lemon SM, Lok A, Alter M. Viral hepatitis. In: Holmes KK et al., eds. *Sexually transmitted diseases*. New York, McGraw-Hill, 2008.
90. Todd CS et al. HIV, hepatitis B, and hepatitis C prevalence and associated risk behaviors among female sex workers in three Afghan cities. *AIDS*, 2010, 24 (Suppl 2):S69–S75.
91. Nuttbrock L et al. Lifetime risk factors for HIV/sexually transmitted infections among male-to-female transgender persons. *Journal of Acquired Immune Deficiency Syndromes*, 2009, 52(3):417–421.
92. Nguyen CH et al. Prevalence of HBV infection among different HIV-risk groups in Hai Phong, Vietnam. *Journal of Medical Virology*, 2011, 83(3):399–404.
93. Dos Ramos Farias MS et al. First report on sexually transmitted infections among trans (male to female transvestites, transsexuals, or transgender) and male sex workers in Argentina: high HIV, HPV, HBV, and syphilis prevalence. *International Journal of Infectious Diseases*, 2011, 15(9):e635–e640.
94. Lai CL et al. Viral hepatitis B. *Lancet*, 2003, 362(9401):2089–2094.
95. WHO. Position paper on hepatitis B. *Weekly Epidemiological Record*, 2009, 84:405–420. Available at: <http://www.who.int/wer/2009/wer8440.pdf> (accessed on 06 June 2012).
96. WHO. *Guidance on prevention of viral hepatitis among people who inject drugs*. Geneva, WHO, 2012. <http://www.who.int/hiv/pub/guidelines/hepatitis/en/index.html> (accessed on 06 November 2012).
97. Geibel S et al. The impact of peer outreach on HIV knowledge and prevention behaviours of male sex workers in Mombasa, Kenya. *Sexually Transmitted Infections*, 2012, 13 February; doi:10.1136/sextrans-2011-050224.
98. Vuylsteke B et al. Quality of sexually transmitted infections services for female sex workers in Abidjan, Cote d'Ivoire. *Tropical Medicine and International Health*, 2004, 9(5):638–643.
99. Nyamuryekung'e K et al. STD services for women at truck stop in Tanzania: evaluation of acceptable approaches. *East African Medical Journal*, 1997, 74(6):343–347.
100. Heiligenberg M et al. High prevalence of sexually transmitted infections in HIV-infected men during routine outpatient visits in the Netherlands. *Sexually Transmitted Diseases*, 2012, 39(1):8–15.
101. Global Commission on HIV and the Law. *Risks, Rights & Health*. New York, UNDP, 2012.

For more information, contact:

World Health Organization
Department of HIV/AIDS
20, avenue Appia
1211 Geneva 27
Switzerland

E-mail: hiv-aids@who.int

http://www.who.int/hiv/topics/sex_worker/en/

ISBN 978 92 4 1504744



9 789241 504744