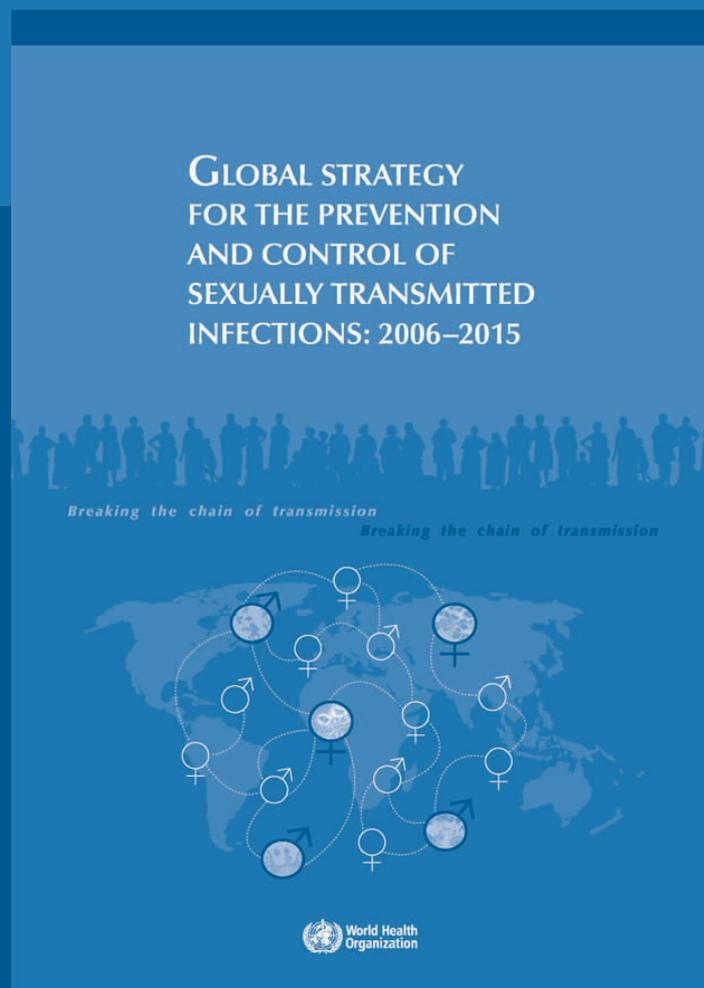


Implementation of the Global Strategy for Prevention and Control of Sexually Transmitted Infections: 2006–2015

PROGRESS REPORT

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Acronyms and abbreviations

AMR	antimicrobial resistance
ANC	antenatal care
EMTCT	elimination of mother-to-child transmission
ESC	extended spectrum cephalosporin
GARPR	Global AIDS Response Progress Reporting
GASP	Gonococcal Antimicrobial Surveillance Programme
GHO	Global Health Observatory
HPV	human papillomavirus
MSM	men who have sex with men
NGO	nongovernmental organization
Pap	Papanicolaou
POCT	point-of-care test
RPR	rapid plasma reagin
STI	sexually transmitted infection
TPHA	Treponema pallidum haemagglutination
TPPA	Treponema pallidum particle agglutination assay
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV and AIDS
VDRL	Venereal Disease Research Laboratory
VIA	visual inspection with acetic acid
WHO	World Health Organization

1. Introduction

Nine years ago, in May 2006, the World Health Assembly unanimously approved and endorsed the *Global Strategy for the Prevention and Control of Sexually Transmitted Infections, 2006–2015* (resolution WHA59.19). The Global Strategy was developed to provide a framework to guide the response for the prevention and control of sexually transmitted infections (STIs), and to support advocacy efforts for programmes providing STI prevention and control services. As the period covered by that Global STI Strategy draws to a close, the World Health Organization (WHO) has compiled a comprehensive report on the implementation of the strategy for the World Health Assembly.

2. Data sources

To document the implementation of the Global STI Strategy, data were compiled from the Global AIDS Response Progress Reporting (GARPR) system (see section 2.1) and the Gonococcal Antimicrobial Surveillance Programme (GASP) (see section 2.2). In addition, a rapid STI programme assessment was conducted between June and July 2014, using a questionnaire sent to countries to determine the successes and gaps of national STI programmes (see section 2.3). Following the assessment, a meeting of technical advisors – including experts in the STI field, programme managers from a few countries, key partners, etc. – was held in Geneva on 27–28 August to discuss the findings of the assessment and propose future directions for STI prevention and control within WHO.

2.1 Global AIDS Response Progress Reporting (GARPR)

To inform global and regional activities relating to HIV and STIs, the UNAIDS Global AIDS Response Progress Reporting (GARPR) system has included STI indicators since 2008, and these indicators were recently augmented for the 2012 reporting period.¹ The STI indicators collected from 194 Member States through GARPR for 2012 (and subsequent years) include:²

- (i) percentage of antenatal care attendees who were tested for syphilis
- (ii) percentage of antenatal care attendees tested who were positive for syphilis
- (iii) percentage of antenatal care attendees positive for syphilis who were treated
- (iv) number of reported congenital syphilis cases
- (v) number of adults reported with syphilis
- (vi) number of adults reported with genital ulcer disease
- (vii) number of men reported with urethral discharge
- (viii) number of men reported with gonorrhoea
- (ix) percentage of female sex workers with active syphilis
- (x) percentage of men who have sex with men with active syphilis.

¹ The number of countries reporting to GARPR for 2012 varied by indicator, ranging from 50 to 55 countries. Numbers of countries reporting are indicated in this report: *Global update on the health sector response to HIV, 2014*. Geneva: World Health Organization; 2014 (http://apps.who.int/iris/bitstream/10665/128494/1/9789241507585_eng.pdf).

² The indicators are listed in this report: *Report on global sexually transmitted infection surveillance 2013*. Geneva: World Health Organization; 2014 (http://apps.who.int/iris/bitstream/10665/112922/1/9789241507400_eng.pdf).

In addition, policy-related questions are asked of countries annually through GARPR on different topics, such as provision of STI services to high-risk groups, national STI guidelines and national policies.

2.2 Gonococcal Antimicrobial Surveillance Programme (GASP)

The WHO Gonococcal Antimicrobial Surveillance Programme (GASP) consists of five regional and two subregional networks/reference centres that support participating laboratories in 68 countries. WHO annually receives data from participating laboratories on the susceptibility of *Neisseria gonorrhoeae* to antimicrobials commonly used for the treatment of gonorrhoea, such as the cephalosporins, azithromycin and quinolones.

2.3 Rapid STI programme assessment

WHO conducted a rapid STI programme assessment using a questionnaire that was sent out from headquarters in Geneva to all regional offices to distribute to STI programme managers or STI focal points in all Member States. The rapid STI programme assessment sought to assess progress in implementation of the interventions recommended in the Global STI Strategy. STI programme managers or focal points were also asked if they had been aware of the existence of the WHO Global STI Strategy and how they came to know about it, as well as whether the key components and priority activities recommended in the Global STI Strategy were being implemented at the country level. However, the questionnaire was not designed to assess the full scope and coverage of the interventions.

Completed questionnaires were sent to a designated survey assessor for each region, who checked and entered the data into a spreadsheet for analysis. If there were any outstanding or unclear issues, the assessor contacted the responsible person at country level for additional information.

The response rate to the questionnaire by region was as follows:

- 26 (55%) of the 47 countries responded from the WHO African Region
- 18 (51%) of the 35 countries responded from the WHO Region of the Americas
- 13 (62%) of the 21 countries responded from the WHO Eastern Mediterranean Region
- 30 (57%) of the 53 countries responded from the WHO European Region
- 10 (91%) of the 11 countries responded from the WHO South-East Asia Region
- 11 (41%) of the 27 countries responded from the WHO Western Pacific Region.

The response rate from countries was somewhat low (a total of 108 out of 194, or 56%), but was sufficient to support some conclusions and tentative plans for the direction of the next phase of the Global STI Strategy. Although the data were analysed independently by each regional survey assessor, they all used a common analysis plan. The analysis was mainly descriptive and semi-quantitative in nature; the full report is available on request.

3. Global burden of STIs

3.1 STI estimates

WHO is finalizing global estimates for 2012 of new cases of the four curable STIs (*Chlamydia trachomatis*, *Neisseria gonorrhoeae*, syphilis and *Trichomonas vaginalis*) in adults aged 15 to 49 years (Table 1). The high burden of curable STIs is evident, with an estimated total of 362 million new infections in 2012, which is roughly 1 million new cases per day. Data cannot be disaggregated by age.

The burden of viral STIs is similarly high, with global estimates of 417 million prevalent cases of herpes simplex virus infections in 2012. In addition, approximately 291 million women harbour a human papillomavirus (HPV) infection at any given point in time.³

Table 1. Global estimates for 2012 of new cases of curable STIs (in millions) among 15- 49 year olds

STI	Total	Females	Males
<i>Chlamydia trachomatis</i>	130	68	62
<i>Neisseria gonorrhoeae</i>	84	36	47
Syphilis	6	3	3
<i>Trichomonas vaginalis</i>	143	68	75
Total	362	175	187

Source: WHO published data

4. Essential elements of the response

4.1 Use of the Global STI Strategy

The rapid STI programme assessment found that the majority of programme managers or focal points responsible for the prevention and control of STIs at the country level had heard of the current Global STI Strategy, as follows: 72% from the African Region, 78% from the Region of the Americas, 85% from the Eastern Mediterranean Region, 70% from the European Region, 80% from the South-East Asia Region and 73% from the Western Pacific Region. Nevertheless, since these are the key persons responsible for the prevention and control of STIs at the country level, a higher percentage of awareness of the existence of the Global STI Strategy was expected. Between 53% and 82% of countries in each WHO region had used the Global STI Strategy to strengthen components of their STI programmes (see Table 3 in the next section).

4.2 Regional strategic plans

Since the endorsement of the Global STI Strategy, all six WHO regions have adapted the Strategy to develop regional strategies or frameworks. In addition, all six WHO regions endorsed and adapted

³ The data are from Globocan (<http://globocan.iarc.fr/>).

the 2007 WHO Strategy on Global Elimination of Congenital Syphilis in the context of dual elimination of mother-to-child transmission (EMTCT) of HIV and syphilis.

5. Prevention and control interventions

5.1 Management guidelines

Information from GARPR showed that since 2006, of 194 member states, at least 109 (88%) of the 124 reporting countries have updated their treatment guidelines or recommendations for the prevention and control of STIs, while the remaining 15 countries (12%) had also updated their national STI guidelines, but did not specify when the updates had been done (Table 2). Information from the rapid STI programme assessment surveys indicated that guidelines were updated based on etiological studies of syndromes in 19 (24%) of the 78 countries that responded to the questionnaire, excluding the 30 countries in the European Region, most of which do not use the syndromic approach (as shown in Table 3). In response to the question on GASP, 67 countries responded that they had conducted studies on antimicrobial resistance, which presumably guided the revision of their STI guidelines. It should be noted that 24 of these countries are in the European Region and 18 are in the Western Pacific Region.

Information obtained from GARPR showed that, overall, of 194 member states, 76 (60%) of 127 reporting countries had a national strategy for EMTCT of syphilis that either stands alone or is integrated with a strategy for EMTCT of HIV (Table 2).

Table 2. Number of countries reporting national STI guidelines or treatment recommendations updated since 2006, and strategy for EMTCT of syphilis, per WHO region

	National STI guidelines or recommendations updated since 2006	Strategy for EMTCT of syphilis
WHO African Region	33/34 (97%)	18/40 (45%)
WHO Region of the Americas	25/27 (93%)	25/28 (89%)
WHO Eastern Mediterranean Region	11/13 (85%)	6/12 (50%)
WHO European Region	19/26 (73%)	13/26 (50%)
WHO South-East Asia Region	9/10 (90%)	7/10 (70%)
WHO Western Pacific Region	12/14 (86%)	7/11 (64%)
Total	109/124 (88%)	76/127 (60%)

Source: Data from Global AIDS Response Progress Reporting (GARPR) system for 2013 (GARPR data are requested of all 194 WHO member states).

5.2 Management of patients with STIs

The Global STI Strategy recommended that the syndromic approach be used for the management of STIs in resource-constrained settings. In the rapid STI programme assessment, it was observed that a large proportion of countries have adopted the syndromic approach in all regions except in Europe, where resources allow the use of laboratory-based diagnosis (Table 3). The Global STI Strategy also recommends that the syndromic approach be based on prevailing causative organisms for the syndromes, confirmed through periodic etiological studies conducted every three to five years. Unfortunately such studies have largely not been conducted, thus putting countries at risk for misdirecting the selected treatments that are listed in guidelines, and therefore this should be an area of focus for future technical and financial support (Table 3).

Table 3. The impact of the Global STI Strategy at the national level, by WHO region

	WHO African Region (N=25)	WHO Region of the Americas (N=18)	WHO Eastern Mediterranean Region (N=13)	WHO European Region (N=30)	WHO South-East Asia Region (N=10)	WHO Western Pacific Region (N=11)
Percentage of countries						
Syndromic management of STIs adopted	96%	89%	100%	20%	90%	91%
Used the Global STI Strategy to strengthen national STI programmes	72%	61%	77%	53%	70%	82%
A national strategy or action plan for STI prevention and control exists	76%	89%	77%	73%	90%	100%
Etiological studies done	8.5%	50%	30%	–	30%	27%

Note: No data indicates there was no response.

Source: Rapid STI programme assessment, 2014.

5.3 Provision of effective STI care and targeted interventions for most-at-risk and vulnerable populations

One of the areas recommended in the Global STI Strategy is the provision of STI prevention and care interventions targeted at most-at-risk and vulnerable populations, such as sex workers, men who have sex with men (MSM) and adolescents. In 2011 WHO, in collaboration with UNAIDS and other partners, published guidelines on prevention and treatment of HIV and other STIs for MSM, entitled, *Prevention and treatment of HIV and other sexually transmitted infections among men who have sex with men and transgender people: recommendations for a public health approach*.

In 2012 WHO, in collaboration with UNAIDS and other partners, published guidelines on prevention and treatment of HIV and other STIs for sex workers, entitled, *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*.

Another important area recommended in the Global STI Strategy is ensuring a reliable supply of safe, effective, high-quality and affordable medicines and commodities for prevention and control of STIs, including male and female condoms and other effective barrier methods.

Most of the countries responding to the rapid STI programme assessment reported interventions involving sex workers, MSM and adolescents in their national action plans. In addition, most countries reported either promoting or providing condoms or both (Table 4). However, the degree of coverage achieved could not be estimated.

Table 4. Targeted interventions and promotion and provision of condoms

	Conduct targeted interventions for sex workers	Work with MSM	Adolescents feature in the national action plan	Condom promotion	Condom provision	STI education in schools
WHO African Region	72%	48%	95%	92%	96%	88%
WHO Region of the Americas	88%	88%	88%	100%	100%	100%
WHO Eastern Mediterranean Region	78%	56%	33%	62%	77%	69%
WHO European Region	53%	70%	63%	80%	66%	93%
WHO South-East Asia Region	90%	50%	60%	90%	100%	80%
WHO Western Pacific Region	91%	73%	82%	91%	100%	100%

Source: Rapid STI programme assessment, 2014.

5.4 Improving information

In all WHO regions, the majority of countries responding to the rapid STI programme assessment have an STI surveillance system in place, with the majority conducting universal case reporting and a few countries conducting both universal and sentinel-based reporting. However, there are still countries in some regions that have not implemented any surveillance system for STIs, and among countries conducting surveillance there is a lack of standardization of the STIs being reported.

Screening for STIs is not widely implemented in resource-constrained settings in the world. The most common STIs for which screening activities are in place are those involving blood – namely syphilis, HIV and hepatitis B infections – and these screening activities mostly target antenatal care clients and blood donors.

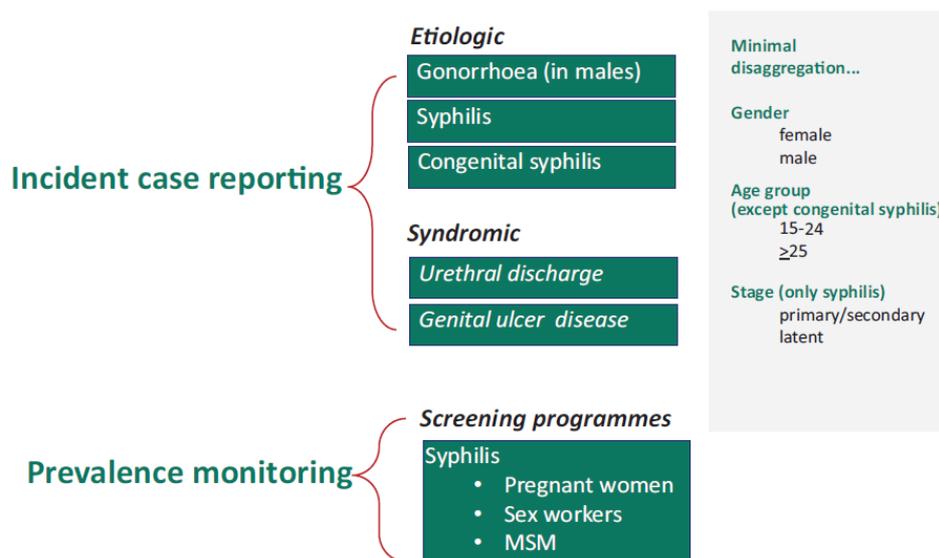
Screening for syphilis in pregnant women seems to be universal in all WHO regions except the Eastern Mediterranean Region, where the proportion of countries routinely screening for syphilis in pregnant women is about 50%. One of the reasons reported for such low screening levels is the belief that the prevalence of syphilis is too low to make screening a cost-effective intervention.

5.4.1 STI surveillance

In 2012, WHO published *Strategies and laboratory methods for strengthening surveillance of sexually transmitted infections 2012* to update and provide a framework for ministries of health and public health decision-makers at national and subnational levels for implementation of STI surveillance systems that generate consistent and reliable data. This publication emphasizes the timely collection, analysis and use of data to facilitate disease-control efforts. In addition, a roadmap based on this document was elaborated to identify how to strengthen routine reporting of key STIs, and a baseline report was also published in 2013: *Baseline report on global sexually transmitted infection surveillance 2012*.

In keeping with the roadmap, in 2012 WHO undertook to: augment STI reporting within the Global AIDS Response Progress Reporting (GARPR) system to encompass the 10 key indicators outlined in the roadmap (see section 2.1); incorporate STI data into the WHO Global Health Observatory (GHO) Data Repository to make GARPR data publicly available; and work with regions to conduct national STI surveillance strengthening exercises in eight countries. Figure 1 shows the core STI indicators that are collected through the GARPR reporting system annually, beginning in 2012 (see also section 2.1).

Figure 1: Core STI indicators collected through the GARPR reporting system.



Source: Baseline report on global sexually transmitted infection surveillance 2012. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/10665/85376/1/9789241505895_eng.pdf).

In June 2014, *Report on global sexually transmitted infection surveillance 2013* was released, to provide information on global and regional STI prevention and control interventions, and to monitor progress of national programmes.

5.4.2 Gonococcal antimicrobial surveillance

Since 2006, WHO has strengthened the Gonococcal Antimicrobial Surveillance Programme (GASP), which now consists of a network of five regional and two subregional reference laboratories. Overall,

the cumulative number of countries reporting to GASP has increased from 52 in 2009 to 68 in 2012. GASP monitors trends in gonococcal antimicrobial resistance (AMR) to inform gonorrhoea treatment recommendations.

In 2012, WHO published the *Global Action Plan to control the spread and impact of antimicrobial resistance in N. gonorrhoeae*. In November 2013, a WHO supplement on gonococcal AMR was published in the journal *Sexually Transmitted Infections*, containing articles from all regions to showcase the work of GASP.

GASP data reveal that resistance in *N. gonorrhoeae* to penicillins and quinolones remains widespread. A substantial number of countries (42) have reported decreasing susceptibility to extended spectrum cephalosporin (ESC), the last-line treatment for gonorrhoea. Moreover, there are documented treatment failures associated with use of ESC in 10 countries.

Information gathered through GASP showed that, as of the end of 2011, the WHO African Region had six countries (13%) monitoring AMR in *N. gonorrhoeae*, the Region of the Americas had 10 countries (29%) monitoring AMR, and the European Region had 24 countries (44%) monitoring AMR in *N. gonorrhoeae*. The Western Pacific Region had 17 countries/areas (49%) conducting AMR testing for gonorrhoea. In the South-East Asia Region, 7 countries (63%) are monitoring AMR in *N. gonorrhoeae*. There are no data from the Eastern Mediterranean Region.

These data, which were published in the *Report on global sexually transmitted infection surveillance 2013*, suggest that regional targets for country participation are needed to ensure that AMR data are representative and meaningful for action at the regional and global levels. More recent data have not yet been published.

5.5 Interface with other programmes

5.5.1 Elimination of mother-to-child transmission of syphilis

In 2007, WHO and other UN partners launched a global initiative to eliminate mother-to-child transmission of syphilis (also known as elimination of congenital syphilis) to prevent the estimated 360 000 adverse pregnancy outcomes every year attributable to syphilis in pregnancy. The WHO Strategy on Mother-to-Child Transmission of Syphilis was also adopted by all WHO regions as part of a strategy for EMTCT of both HIV and syphilis.

From 2008 to 2013, the median reported proportion of antenatal care (ANC) attendees tested for syphilis in countries increased from 78% to 84%, and the reported syphilis seropositivity rate among ANC attendees decreased from 1.4% to 0.6% (Table 5). Reported treatment coverage figures are high, but are very likely overrepresented.

Table 5: Cascade of priority indicators for elimination of mother-to-child transmission (EMTCT) of syphilis among antenatal care (ANC) attendees, 2008–2013

	% of ANC attendees tested for syphilis (median %)		% of ANC attendees tested who are positive for syphilis (median %)		% of ANC attendees positive for syphilis who received treatment (median %)	
	2008	2013	2008	2013	2010*	2013
WHO African Region	59	58	2.3	2.2	100	96
WHO Region of the Americas	73	83	0.9	0.6	85	82
WHO Eastern Mediterranean Region	–	–	–	0.0	–	–
WHO European Region	100	99	0.3	0.1	–	100
WHO South-East Asia Region	–	75	1.3	0.3	–	–
WHO Western Pacific Region	–	96	0.3	0.2	98	–
Global	78	84	1.4	0.6	99	94

* This indicator was not reported on in 2008.

Note: Data not shown for regions with fewer than five countries reporting on that indicator in that year.

Source: Data from Global AIDS Response Progress Reporting (GARPR) system for 2013.

In July 2014, WHO released *Global guidance on criteria and processes for validation: elimination of mother-to-child transmission of HIV and syphilis*. This document provides standardized processes and criteria to validate EMTCT of HIV and syphilis.

Although syphilis data that allow monitoring of trends and progress are available, additional years of collection are needed before credible monitoring of other core STI etiologies and syndromes can be done.

5.5.2 Human papillomavirus and cervical cancer

Screening for cervical cancer is lowest in the African and Eastern Mediterranean Regions. Where screening for cervical cancer does take place, the countries are predominantly using the Papanicolaou test (Pap smear), except in the African and South-East Asia Regions where visual inspection with acetic acid (VIA) is used more than the Pap smear.

5.6 Innovations

5.6.1 Vaccines

In 2014, WHO held a consultation on STI vaccines which resulted in the publication in March 2014 of a special issue of the journal *Vaccine* entitled “Sexually transmitted infections: vaccine development for global health” (*Vaccine* 2014, volume 32).

5.6.2 Diagnostic tests for STIs

In 2013, the revised WHO laboratory diagnostic manual for STIs was published. This manual, *Laboratory diagnosis of sexually transmitted infections, including human immunodeficiency virus*, provides a basic understanding of the principles of laboratory tests in the context of screening and diagnostic approaches, as well as antimicrobial susceptibility testing.

In May 2014, a technical consultation on point-of-care tests (POCTs) for STIs was held to discuss and agree on target product profiles for the POCT to detect five STIs (syphilis, *Chlamydia trachomatis*, *N. gonorrhoeae*, *Trichomonas vaginalis* and HPV). The consultation was the first in a series of meetings to establish an international research platform to be led and coordinated by WHO. In addition, WHO initiated a portfolio of laboratory, field and implementation studies in five countries to evaluate new dual HIV/syphilis POCTs. The laboratory evaluation in China and Nigeria found that all three tests evaluated had high sensitivity and specificity, with minimal inter-reader variability and high stability of results even one hour after the reading window.

5.6.3 Condoms

Analysis of data from the rapid STI programme assessment showed that most of the responding countries either promote or provide condoms, or do both (Table 4).

5.6.4 Health education

Although health education on STIs in schools is still evolving, a significant majority of countries responding to the rapid STI programme assessment indicated that they provided it (Table 4).

5.6.5 Microbicides

1% tenofovir vaginal gel and the dapivirine intravaginal ring are in late-stage clinical trials with results expected in early 2015 and 2016, respectively. If the trials confirm safety and effectiveness of the products in preventing HIV infection in women, licensure dossiers will be rapidly submitted to national drug regulatory authorities. WHO will then begin the process for the development of WHO normative guidance on topical pre-exposure prophylaxis in order to provide guidance for countries on whether and how these new products can be used within existing HIV-prevention programmes.

Prioritization of the implementation research needed to inform the development of WHO normative guidance has been elaborated, identifying the highest priority implementation research questions that can and need to be addressed in advance of licensure. These studies will provide more information on the safety of the method for prolonged periods of use, and will assess how the product can be delivered in an acceptable and sustainable manner to women at high risk of HIV infection. In addition, the core scenarios on the impact and cost-effectiveness of topical microbicides for HIV prevention have been completed. These will be the basis for modelling the implementation of topical pre-exposure prophylaxis, in addition to common output metrics needed to address policy-makers' questions. The model outputs will also be used to inform investment decisions regarding scale-up of the new microbicide products and to determine the design of implementation programmes.

5.6.6 Sexual partners – follow up and management

The management of sexual partners of clients treated for STIs is one of the interventions recommended in the Global STI Strategy. Analysis of responses by region to the rapid STI programme

assessment ranged from 33% of responding countries in the Eastern Mediterranean Region to 68% of the responding countries in the African Region reporting implementation of partner management.

6. Regional assessments and observations

6.1 WHO African Region

In the African Region, information was obtained from 26 (55%) of 47 countries through the rapid STI programme assessment. The analysis showed that the key elements recommended in the current Global STI Strategy have been adopted and are being implemented, but not to scale. Country-level assessments are needed to determine the coverage being achieved in all the key aspects of the Strategy.

The main issues to be addressed in the African Region are the following:

- The syndromic management of STIs requires that the pathogens causing the syndromes be validated at reasonably short intervals of three to five years, but only four countries have conducted such studies in the past five years. Advocacy and support for etiological studies to validate the syndromic management of STIs are needed or the syndromic approach will lose its scientific basis.
- Gonococcal antimicrobial resistance (AMR) has become a global threat to the control of gonorrhoea. There is a serious lack of data on gonococcal AMR in the African Region. Although 10 countries indicated in the questionnaire that they had conducted studies on gonococcal AMR in the past five years, this information is not available, and fewer than five countries are actually conducting such studies. There is a need to follow up with the countries that indicated GASP activities, to verify and validate the data and support them to improve the quality of their data, where necessary, and encourage other countries to embark on such surveillance.
- Screening for syphilis, particularly in pregnant women, is still fraught with problems, such as a lack of diagnostic tests and a lack of screening policies in 16% of reporting countries. Despite these obstacles, it should be noted that syphilis is one of the most commonly screened STIs in the African Region. Coverage needs to be improved such that more, if not all, pregnant women are screened.
- Previous assessments have shown that screening for syphilis using the rapid plasma reagin (RPR) test or other laboratory-based syphilis tests was not feasible in many settings. With the introduction of the rapid diagnostic tests, universal screening of pregnant women seemed feasible. Yet among the 21 countries that stated they are doing syphilis screening, only 9 have taken up the use of rapid diagnostic tests for this purpose. The reluctance to adopt these tests is worth investigating, and if alternatives become available (e.g. the newer RPR-equivalent point-of-care molecular tests), their additional value can be explored to increase uptake and coverage.
- Targeted services for vulnerable and most-at-risk populations need to be enhanced in the African Region. A number of countries have put in place such services, but they are still inadequately implemented, and most of these services are conducted by nongovernmental organizations (NGOs) rather than being a core activity of national governments. In the African Region the most targeted populations are female sex workers and long-distance

truck drivers. In the majority of countries, there also seem to be services for adolescents, a key vulnerable population.

- The quality of STI surveillance needs to be improved further. Eighty per cent of the reporting countries in the Region have surveillance systems in place, but there is a lack of standardization that would enable reliable data collection and meaningful interpretation of the data.

6.2 WHO Region of the Americas

Responses were received from 18 (51%) of the 35 countries in the Region of the Americas. Many of the elements recommended in the Global STI Strategy have been implemented in this Region. The extent to which coverage is attained needs further assessment.

The following areas need further strengthening in the future:

- Syndromic management is accepted as a national policy in 16 (89%) of the 18 countries, but only 9 countries (50%) have used etiological studies of syndromes to update their respective guidelines, and 6 countries (27%) stated that they had updated the guidelines based on data from antimicrobial resistance studies.
- Most screening of STIs is conducted among blood donors, STI clinic clients and antenatal clinic clients, predominantly for syphilis, HIV and hepatitis B.
- Although 16 countries (89%) have a national STI surveillance system in place, the reporting approaches are neither standardized nor uniform from one country to another.
- Of the 18 countries that responded, 10 (45%) indicated that they conduct antimicrobial susceptibility testing in *N. gonorrhoeae*.

6.3 WHO Eastern Mediterranean Region

From the responses of 13 countries out of 22 (59%) in the Eastern Mediterranean Region, it would seem that the key elements of the Global STI Strategy have been adopted and are being implemented. However, the following are some important issues in need of strengthening:

- The majority of the respondent countries in the Region have an STI surveillance system in place, most of them conducting universal case reporting while a few conduct both universal and sentinel-based reporting. However, there are still some countries in the Region which have not implemented any STI surveillance system – these countries will need to be followed up to explore ways of implementing such surveillance.
- Gonococcal AMR surveillance has not been widely conducted in the countries of the Region. Monitoring of gonococcal AMR is ongoing in one country, and one other country plans to implement this activity in 2015.
- Although all the 13 countries that responded to the questionnaire indicated that the syndromic management of STIs was accepted as national policy or recommendation, only 4 countries had conducted etiological studies in the past five years to determine the prevailing pathogens causing the syndromes in the Region.
- Screening for syphilis, particularly in pregnant women, is still fraught with problems in this Region, which is perceived to have very low syphilis prevalence. Furthermore, some countries have no diagnostic tests and others have a policy of not screening due to low prevalence of syphilis.

- Targeted services for vulnerable and most-at-risk populations have been implemented except for adolescents. Most of the interventions are conducted by NGOs and coverage is inadequate.

6.4 WHO European Region

Thirty out of 54 countries (56%) responded from this Region, but the overwhelming majority were among the more developed western European countries and/or were members of the European Union. Thus, the analysis does not represent the entire European Region well. Nevertheless, a few observations can be made for further follow-up:

- Although all 30 of the responding countries have a national STI surveillance system in place, the reporting approaches are neither standardized nor uniform from one country to another. Comparisons between countries for purposes of determining good practice in STI surveillance would not be easy.
- The most frequently reported STIs are syphilis, gonorrhoea and chlamydial infections, followed by HIV infection. *Trichomonas vaginalis* infection, the most frequent, curable STI in the world, is reported only from four countries.
- Twenty-nine (97%) of the 30 responding countries stated that they conducted routine screening for syphilis in pregnant women. The commonly used tests for syphilis screening in those 29 countries were the non-treponemal tests, such as the RPR or VDRL tests, and laboratory-based treponemal tests, such as the TPPA and the TPHA. Although these tests are used at all levels of the health system, the testing is not commonly offered to men who have sex with men or sex workers in many countries. This is probably a missed opportunity for making an impact on syphilis in these key populations.

6.5 WHO South-East Asia Region

Ten (91%) of the 11 countries in the Region provided responses through the rapid STI programme assessment. Many of the interventions recommended in the Global STI Strategy have been taken on board in the majority of the countries, but a few outstanding gaps can be highlighted, as follows:

- Even though the syndromic approach is used in the majority of the countries that responded, only three countries (30%) have conducted studies to identify the common etiologies of the syndromes in recent years.
- Eight countries (80%) stated that they conducted routine screening for syphilis in pregnant women, while two countries did not routinely conduct this screening because of unavailability of tests. Follow-up may be necessary to explore the reasons for not being able to stock relatively cheap tests for syphilis.

6.6 WHO Western Pacific Region

Responses were received from 11 (38%) of the 29 countries in the Western Pacific Region.

- Guidelines and protocols for the management of STIs exist in 8 (73%) of the 11 countries that responded. Syndromic management of STIs is accepted as a national policy in 10 (91%) of the 11 countries. Only 3 (27%) of the 11 countries used etiological studies of syndromes to update the guidelines, and 7 (64%) of the 11 countries stated that they had updated the guidelines based on data from AMR studies.
- Analysis of responses from these 11 countries showed that 10 (91%) have a national STI surveillance system in place. However, as in other WHO regions, the reporting approaches

are neither standardized nor uniform from one country to another. In this Region, there is a mixture of universal and sentinel-based surveillance as well as a mix of syndromic and laboratory-based reporting, with more countries doing the latter. Of note for follow-up is that there seem to be a number of countries that base their reports on clinical diagnosis.

7. CONCLUSIONS AND RECOMMENDATIONS

There has been steady progress in the translation of the WHO policy and strategic documents into action at the national level. In each WHO region, technical guidance, policies and strategic approaches have been adapted and translated into regional and national action plans, and some countries have achieved remarkable progress. This illustrates the epidemiological impact that can be achieved with concerted efforts and resources.

Most countries seem to have embraced the syndromic approach to the management of STIs, but the studies required to validate the pathogens causing the syndromes are not being performed as recommended, every three to five years. In some countries no studies have been conducted at all in the last decade.

Screening for syphilis in pregnancy seems to have been adopted by an overwhelming majority of the countries that responded to the questionnaire. It is likely, therefore, that the global elimination of mother-to-child transmission of syphilis can be achieved. However, it will be necessary to increase the coverage so that, worldwide, every pregnant woman in the urban, peri-urban, rural and mobile communities is screened for syphilis early in pregnancy and treated promptly if found to be positive.

Some of the interventions that are still evolving include STI surveillance systems, which have been introduced and rolled out in several countries, but are neither standardized nor consistent. As a response to the impending menace of untreatable gonococcal infections, the WHO Gonococcal Antimicrobial Surveillance Programme (GASP) was recently re-introduced in countries where it did not exist, but it is struggling to take off in these new settings. Thus, STI surveillance, including gonococcal antimicrobial resistance (AMR) monitoring, is one of the areas in need of closer attention in the next phase of the WHO Global STI Strategy, not only to monitor the magnitude of the burden of STIs, but also to improve the quality of data collected.

Some of the challenges to be tackled in the next phase of the Global STI Strategy include the following:

1. Although the burden of STIs is often high in key populations, such as sex workers and men who have sex with men, engagement with such key populations is fraught with stigmatization, political interference and financial constraints such that the programmes are not implemented at an adequate scale.
2. With insufficient funding, it will not be possible to conduct prevalence studies, etiological surveys of STI syndromes and AMR studies, which are needed to make STI surveillance systems more robust and consistent and provide:
 - information and data that are needed to support decision-making processes, and
 - information about AMR in STI pathogens, including *Neisseria gonorrhoeae*.
3. Scaling-up of effective interventions will require an injection of new money. In the prevailing economic climate of dwindling funding for many programmes, the STI programmes are going

to have to compete more aggressively to access new money, use opportunities that exist to collaborate with other disciplines and programmes and advocate that national budgets include an STI component, especially for most-at-risk and other key populations.

4. Although NGOs are becoming more involved in STI prevention and control at the national level, in most countries they are only reaching a small fraction of the target population. Governments, in collaboration with NGOs, therefore, need to identify mechanisms for scaling up interventions, particularly for key populations most at risk of contracting STIs and those with a high probability of transmitting the infections.
5. The changing epidemiology of genital ulcerative diseases from both bacterial and viral causes requires locally determined prevention and treatment strategies, as well as more research into, and production of, prevention interventions, such as vaccines, microbicides and multi-purpose prevention technologies, including examination of the role of each individually and in combination, to ascertain the best approach for maximum impact. This will include increased STI awareness, condom promotion, male circumcision, counselling and sexual behaviour change.
6. As the epidemiology of STIs continues to change, the role of the syndromic approach to the management of STIs will be pushed to its limit; there is a growing need for rapid diagnostic tests and this will become more urgent. Resources and strategies to incorporate rapid diagnostic tests into flowcharts for the management of STI syndromes will be needed. The availability of such tests depends on pharmaceutical companies conducting more research and product production.
7. Antimicrobial resistance, particularly in *N. gonorrhoeae*, is going to impact on the successes achieved in the reduction of some of the STIs. Funding to strengthen laboratory capacity through increasing human resources and building skills to conduct AMR testing will be needed, but this poses a great challenge. In the monitoring of gonococcal AMR, there will be a need for advocacy to increase the recognition that studies for antimicrobial susceptibility testing are part of patient care and not pure academic research and therefore should be facilitated and exempted from the costs and delays of ethical reviews.

It is evident, therefore, that the next phase of the Global STI Strategy has to focus not only on building on the moderate successes to achieve universal coverage using interventions with demonstrable impact, but also developing new technologies – such as improved diagnostics, vaccines and microbicides – and improved methods for behavioural change interventions.