

Global and Regional Epidemiology of Syphilis



Naoko Ishikawa
Coordinator, HIV, Hepatitis, and STI Unit
Division of Communicable Diseases, WHO WPRO

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Disclosure

I have no actual or potential conflict of interest in relation to this presentation

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Outline

- Global and regional burden of sexually transmitted infections
- Syphilis on the rise
- Elimination of congenital syphilis
- Addressing syphilis epidemic

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Over one million new STIs are acquired each day

- 376.4 million new infections in adults in 2016

Chlamydia	127 million
Gonorrhoea	87 million
Trichomoniasis	156 million
Syphilis	6.3 million

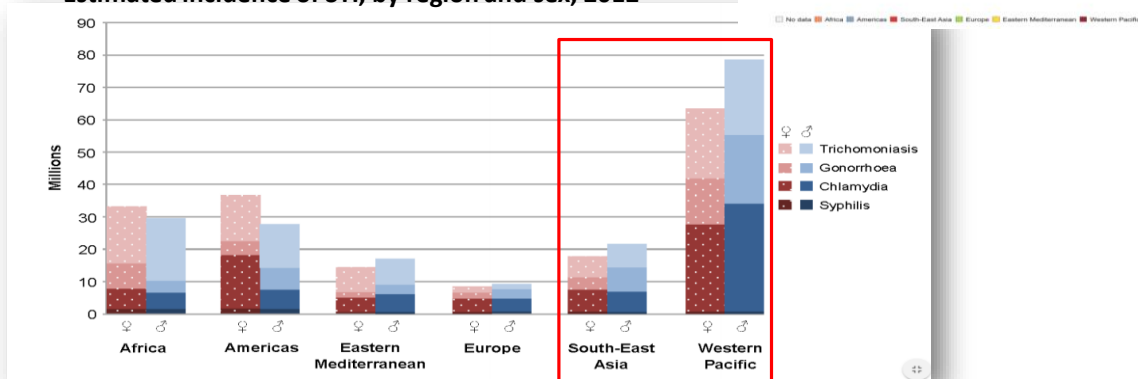
New cases of chlamydia, gonorrhoea, trichomoniasis, and syphilis among adults 15 to 49 years of age (WHO global estimates for 2016)

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High incidence of curable STIs in women and men in Asia Pacific



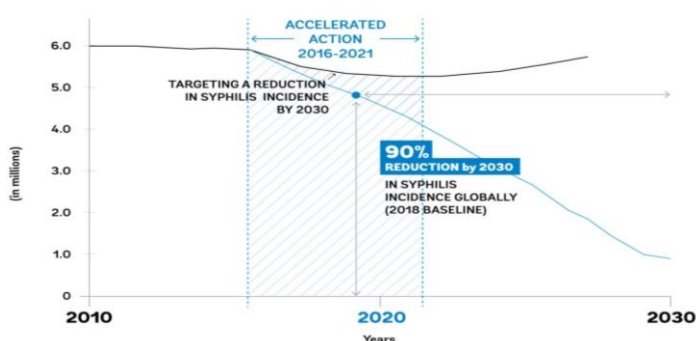
Estimated incidence of STI, by region and sex, 2012



Source: Newman, L., et al., Global Estimates of the Prevalence and Incidence of Four Curable Sexually Transmitted Infections in 2012 Based on Systematic Review and Global Reporting. PLoS One, 2015. 10(12): p. e0143304.
WHO, Global Health Sector Strategy on Sexually Transmitted Infections, 2016-2021

World Health Organization
Western Pacific Region

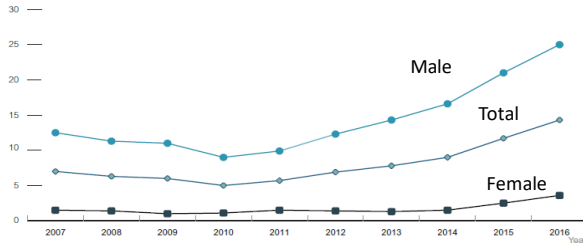
Global Health Sector Strategies on STI 2016-2021 sets 2030 targets – two on syphilis



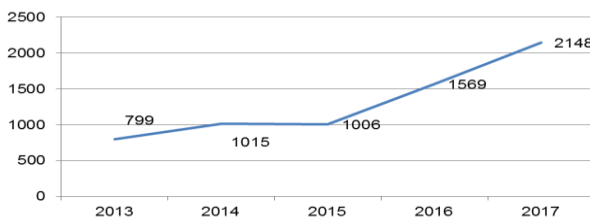
- **90% reduction of *T. pallidum* incidence (2018 global baseline)**
- **90% reduction in *N. gonorrhoeae* incidence (2018 global baseline)**
- **≤50 cases of congenital syphilis per 100 000 live births in 80% of countries**
- **80% human papillomavirus (HPV) vaccine coverage in adolescent 9-14 years of age in 80% of countries**

Reported syphilis cases on the rise in multiple countries

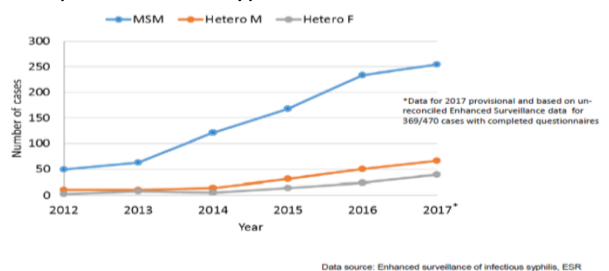
Syphilis notification rate per 100,000, 2007-2016: **Australia** Reported cases of syphilis 2010-2016: **Japan**



Reported cases of syphilis 2013-2017: **South Korea**



Reported case of syphilis 2012-2017, **New Zealand**

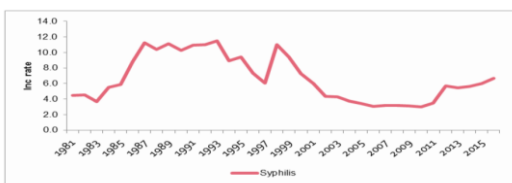


HIV, viral hepatitis and sexually transmissible infections in Australia, Annual Surveillance Report 2017
Public Health Weekly Report, PHWR, Korea CDC Vol.11, No.27 2018
The National Epidemiological Surveillance of Infectious Diseases (NESID) in Japan
New Zealand personal communication

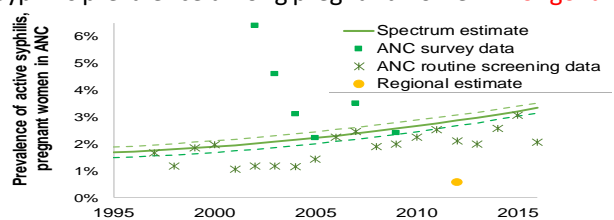
Data source: Enhanced surveillance of infectious syphilis, ESIR

Syphilis on the rise including congenital syphilis

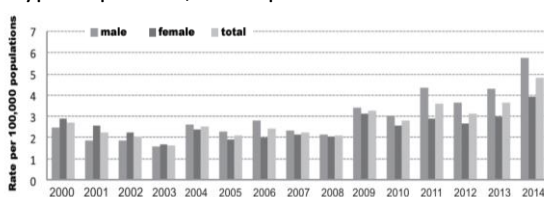
Syphilis incidence rate 1981-2016: **Malaysia**



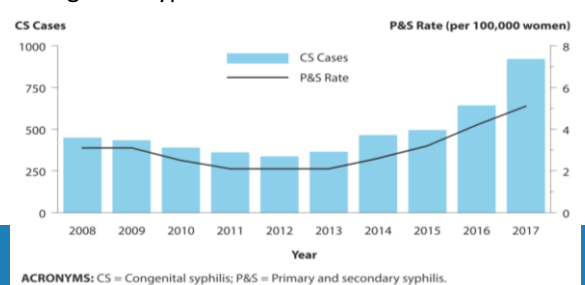
Syphilis prevalence among pregnant women: **Mongolia**



Syphilis per 100,000 Population 2000-2014: **Thailand**



Congenital syphilis cases 2008-2017: **United States**



Moh Malaysia (2016) Surveillance data, IV/STI/Hepatitis C sector
National guidelines on elimination of congenital syphilis in Thailand 2015. Department of Disease Control, Thailand Ministry of Public Health.
Mongolia (2018) National Center for Communicable Diseases
US CDC (2018) https://www.cdc.gov/mmwr/sr17/sr1705a1-surveillance-report_CDC-clearance-9-10-18.pdf

ACRONYMS: CS = Congenital syphilis; P&S = Primary and secondary syphilis.

Congenital syphilis

Can we allow this to happen in 2018?

Sixth infant dies from congenital syphilis amid outbreak in northern Queensland

By political reporter Dan Conner
Updated 3 Mar 2018, 9:24am

A sixth infant has died from congenital syphilis amid a devastating outbreak of the disease in parts of remote Australia.

The young children have all died in Queensland, where the spate of cases emerged in 2011.

Department of Health official Sharon Appleyard told Senate Estimates that six of 13 infants with reported cases of congenital syphilis had died.

The latest death occurred in northern Queensland in January.

The sexually transmitted infection can be passed from a mother to her baby during pregnancy.

Australian Broadcasting Corporation



PHOTO: Treponema can cause miscarriage

NZ babies dying from syphilis: 'Our health care systems are falling over' say experts

10 Jul 2018 5:00pm

© 3 minutes to read



A ministry spokesman confirmed that since 2011 there had been three live births where the infant had congenital syphilis. Photo / File

By Nicholas Jones
Political reporter, NZ Herald
nicholas.jones@herald.co.nz
@nickajonesnz



New Zealand babies are dying from syphilis passed on from their mothers during pregnancy.

NZ Herald

朝日新聞
DIGITAL

Increasing mother-to-child transmission of syphilis (JAPAN)

シリーズ：その他

梅毒の母子感染が増加 「妊娠の有無」届け出を義務に

田村 吉 2018年4月17日 22時32分

梅毒に感染している妊娠中の女性から胎児に感染する「先天梅毒」の報告数が増加傾向にあることを受けて厚生労働省は17日、感染症法に基づく医療機関からの梅毒の届け出事項に「妊娠の有無」を加える方針を決めた。感染した妊婦数の把握と適切な治療による子への影響軽減を図る。

梅毒は主に性行為で感染する。国立感染症研究所によると、昨年の報告患者は全国で582人（暫定値）と4年ぶりに5千人を超えた。女性は20〜30代に多く男性は20〜50代に多い。妊婦が感染すると流産や死産になりやすくなり、子の目や耳に障害が出たりする。

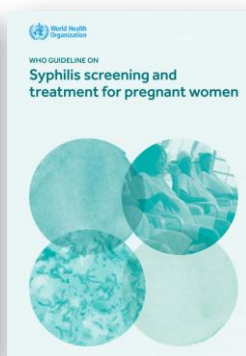
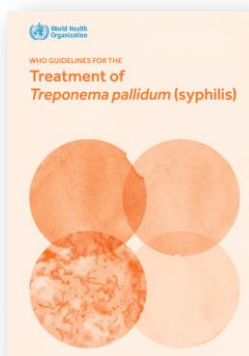
厚労省によると、先天梅毒と診断された赤ちゃんは2012、13年は4人、15年は13人、16年は14人と増加。梅毒と診断された妊婦は16年に33人とする厚労省研究班の調査データもある。だが妊婦についての届け出は義務づけられておらず、梅毒と診断された妊婦の実態は分かっていなかった。厚労省は年内にも、届け出事項に加える。担当者は「早期に抗薬を服用すれば、胎児への感染は防げる」と注意を促す。また、性風俗業界で働く女性からの男性への感染の増加が指摘されていることから、性風俗で働いたことがあるかや利用歴についての項目も加える。

Asahi Shimbun

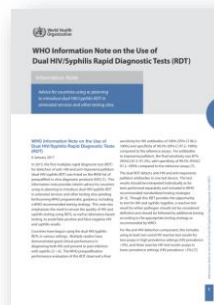
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New WHO guidelines available for syphilis (2016, 2017)



HIV/syphilis dual rapid test kits



SD Bioline (WHO Pre-qual)



Chembio (CE marked)



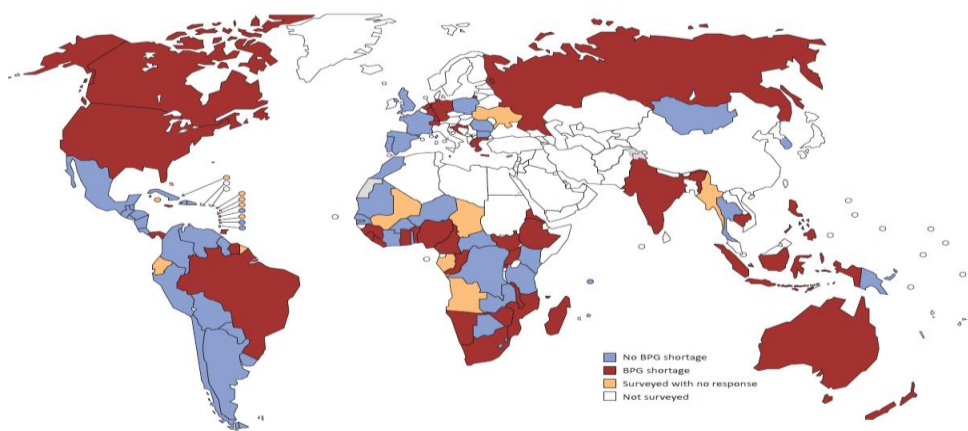
Premier Medical Group
(WHO review for Pre-qual)

<http://www.who.int/reproductivehealth/publications/rtis/syphilis-treatment-guidelines/en/>
<http://www.who.int/reproductivehealth/publications/rtis/syphilis-ANC-screenandreat-guidelines/en/>
<http://www.who.int/reproductivehealth/publications/rtis/dual-hiv-syphilis-diagnostic-tests/en/>

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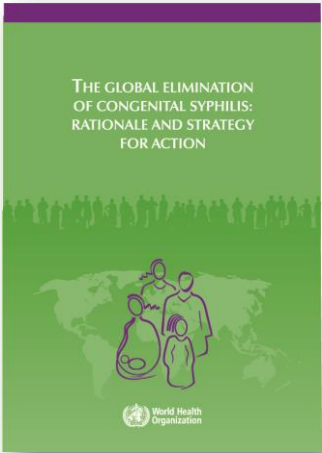
Over 40 countries have experienced benzathine penicillin shortages in 2014-2018



Global Elimination of Congenital Syphilis (CS)

In 2007, WHO and partners launched global elimination of congenital syphilis as a public health problem using justifications of:

- SEVERE & COMMON CONDITION
- COST EFFECTIVE INTERVENTION
- PROGRAMMATICALLY FEASIBLE
- FIT GLOBAL CONTEXT
- REGIONAL EXAMPLE



Global criteria and processes for validation of elimination of mother-to-child transmission (EMTCT) of HIV and syphilis (updated in 2017)

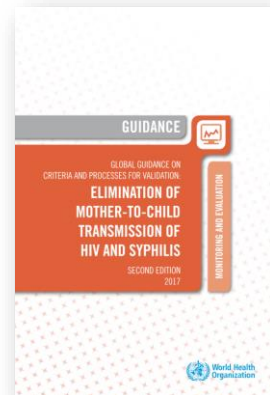
Elimination criteria

Congenital syphilis case rate ≤ 50 per 100,000 live birth

with 2+ years of

- $\geq 95\%$ antenatal care (ANC) attendance
- $\geq 95\%$ maternal syphilis screening in ANC
- $\geq 95\%$ of positive cases “adequately” treated

<http://www.who.int/reproductivehealth/publications/emtct-hiv-syphilis/en/>



The Ultimate Prize: Validation of EMTCT of Syphilis and HIV

11 Countries validated

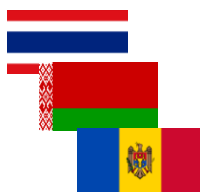
2015

- Cuba



2016

- Thailand
- Belarus
- Moldova



2017

- Anguilla
- Antigua & Barbuda
- Bermuda
- Cayman Islands
- Montserrat
- St. Christopher & Nevis

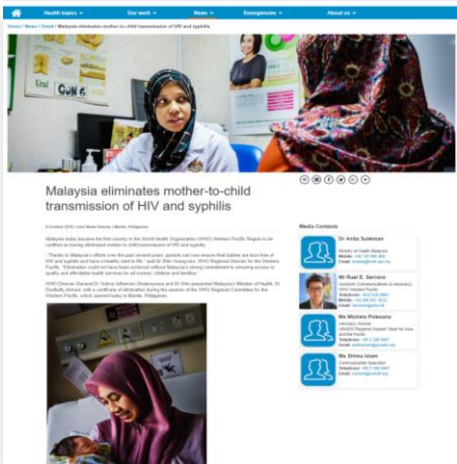


2018

- Malaysia



Malaysia: First country in the Western Pacific region to eliminate mother-to-child transmission of syphilis and HIV



WHO official certificate presented to the Minister of Health, Malaysia at the 69th Regional Committee for the Western Pacific, 8 October 2018 (Manila)

15 | <http://www.who.int/westernpacific/news/detail/08-10-2018-malaysia-eliminates-mother-to-child-transmission-of-hiv-and-syphilis>



Regional Framework for Triple Elimination of Mother-to-Child Transmission (EMTCT) of HIV, Hepatitis B and Syphilis in Asia and the Pacific 2018-2030

Vision
 Every infant free of HIV, hepatitis B and syphilis

Goal
 Achieve and sustain EMTCT of HIV, hepatitis B and syphilis and achieve better health for women, children and their families through a coordinated approach and efforts by 2030

Pillar 1: Policy
 Coordinated national policy and strategy

Pillar 2: Service delivery
 Seamless quality care for women, newborns, children and their families

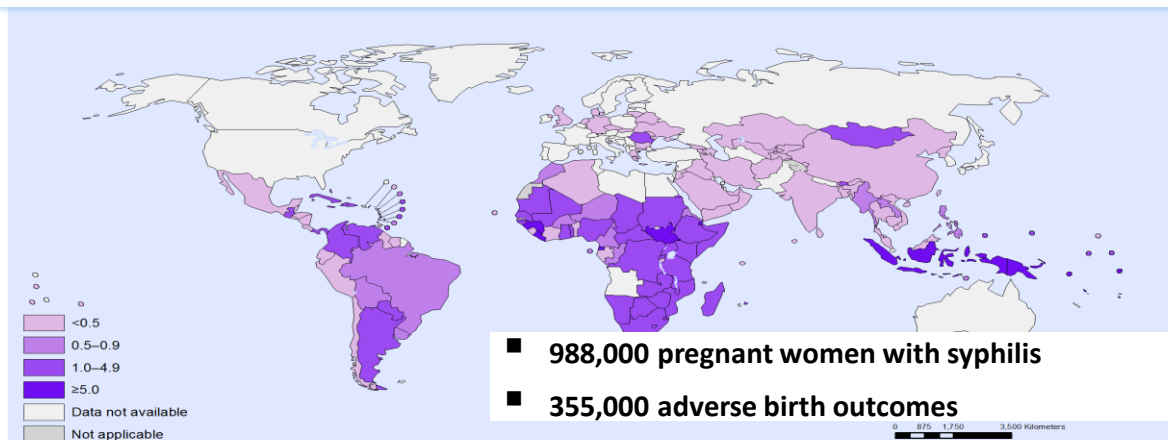
Pillar 3: Monitoring & Evaluation
 Coordinated monitoring and evaluation of elimination



16 | <http://www.who.int/westernpacific/activities/eliminating-mother-to-child-transmission-of-hiv-hepatitis-syphilis>
<http://iris.wpro.who.int/bitstream/handle/10665.1/14193/9789290618553-eng.pdf?ua=1>



Percentage of antenatal care attendees positive for syphilis 2016 Interim analysis



The boundaries and names shown and the designations used on this map 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 and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Information Evidence and Research (IER)
World Health Organization

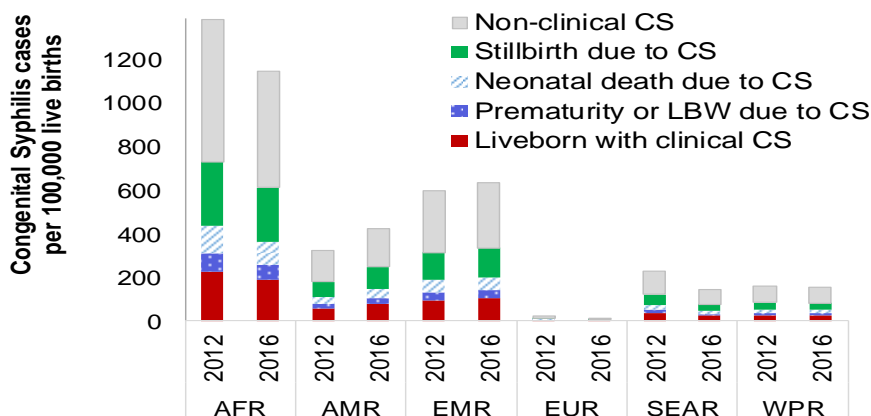
World Health Organization
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Uses latest data reported by countries since 2008

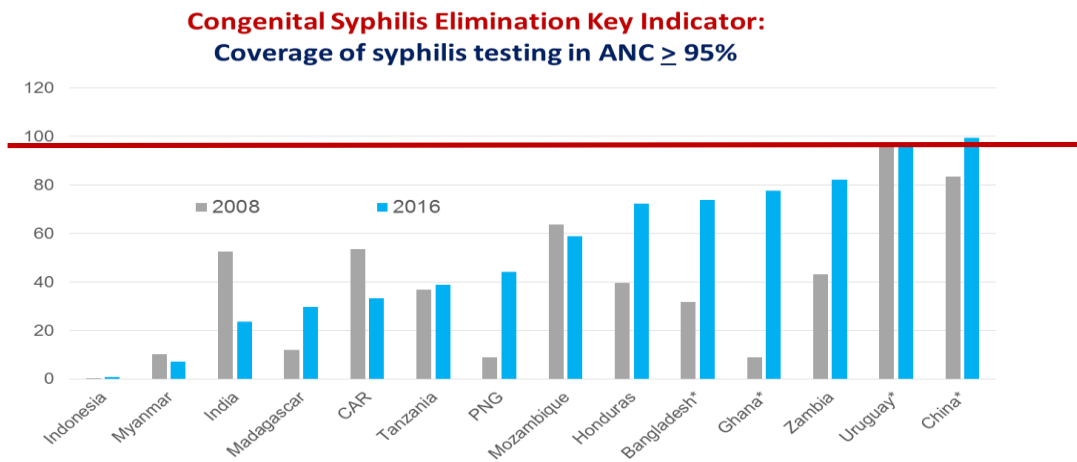
Draft 2016 Congenital Syphilis Case Estimates

Maternal syphilis prevalence 0.69%

473 cases/100,000 live births



Programme Data: Antenatal syphilis testing coverage in priority countries, 2008 and 2016

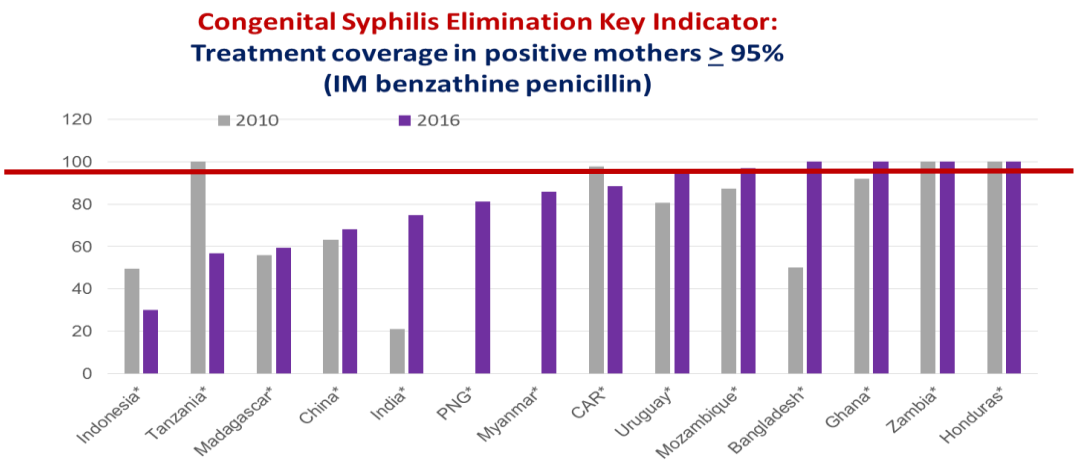


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• Data not reported in 2008 or 2016, thus closest data point used
CAR: Central African Republic, ONG: Papua New Guinea



Programme Data: Treatment coverage among syphilis-seropositive pregnant women in priority countries, 2010 and 2016



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Data not reported in 2010 and/or 2016, thus closest data point used
CAR: Central African Republic, ONG: Papua New Guinea



Let's face syphilis (STIs) epidemic

- Increase in primary and secondary syphilis cases in a number of countries over last 5-8 years
- Significant increase among men who have sex with men (in Asia, large proportions are married or have female partners)
- Increasing heterosexual transmission affecting women, followed by congenital syphilis
- Young populations (e.g. 20-29 years old) and cultural/racial minority groups including indigenous communities being affected
- Co-infections are not rare (e.g. other STIs including HIV)

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It's a reflection of our society and health systems

- Continued lack of commitment and neglect of STIs
- Widening disparity in accessing health services among vulnerable populations – health system failure
- Increased use of social networking technologies - 2.46 billion in 2017 (over two-fold increase since 2010) – changing behaviours
- Young populations including adolescents – their specific needs, sexual health, drug use, decreased condom use
- Population movement – migrants, tourism, overseas workers - their health needs

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Source: Statista <https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/>

What's needed?

Joint call and action to make a strong rope

- Simple and low-cost diagnostics and treatment are available
- **Quality data** needed, in particular from low and middle-income countries – technical support needs
- **Modelling for investment case** – establish political commitment
- **Clear and bold messages and communications for target populations** through platforms and channels used by communities
- Collaborations and joint work with affected populations, in particular with **MSM communities**

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What's needed?

Condom and regular screening/treatment

- Disclaimer needed for **Undetectable = Untransmittable**, **mind STIs!**
- Marry PrEP – **no PrEP without STI services**, excellent entry point to regular STI screening and treatment
- **Universal antenatal syphilis (and other STIs) screening with partners**, pre-marital/pre-pregnancy testing
- **Sexual health as a part of routine health check-up** (e.g. annual health assessment, maintenance of personal health)
- **Condom, condom, and condom** (any condom which attracts users?)

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Conclusion

What are we waiting for? Act now!

- Global prevalence and incidence of STIs remain high, with **over one million new infections each day**
- Reported **syphilis cases on the rise in multiple countries among MSM**, but also among heterosexuals and congenital syphilis
- **Successful cases of EMTCT of syphilis** in a number of countries
- **Joint call and action** needed to address syphilis (and STI) epidemic

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Thank you

Acknowledgements

Australia	Skye McGregor
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WHO/Yoshi Shimizu

STI <http://www.who.int/reproductivehealth/topics/rtis/en/>

EMTCT <http://www.who.int/westernpacif/activities/eliminating-mother-to-child-transmission-of-hiv-hepatitis-syphilis>

Naoko Ishikawa ishikawan@who.int

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