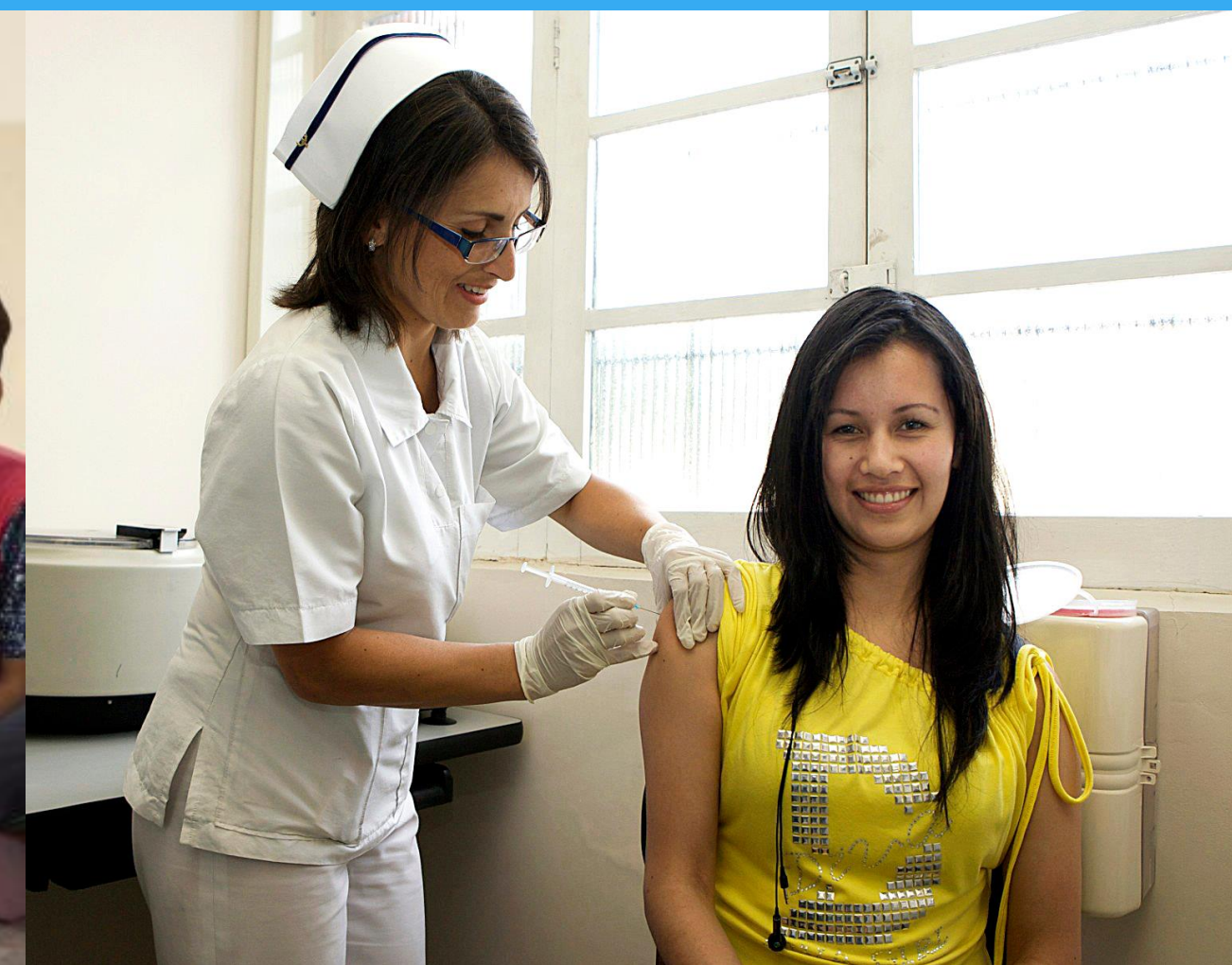


MenB vaccines and prevention of gonococcal infection: a global perspective



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**World Health
Organization**

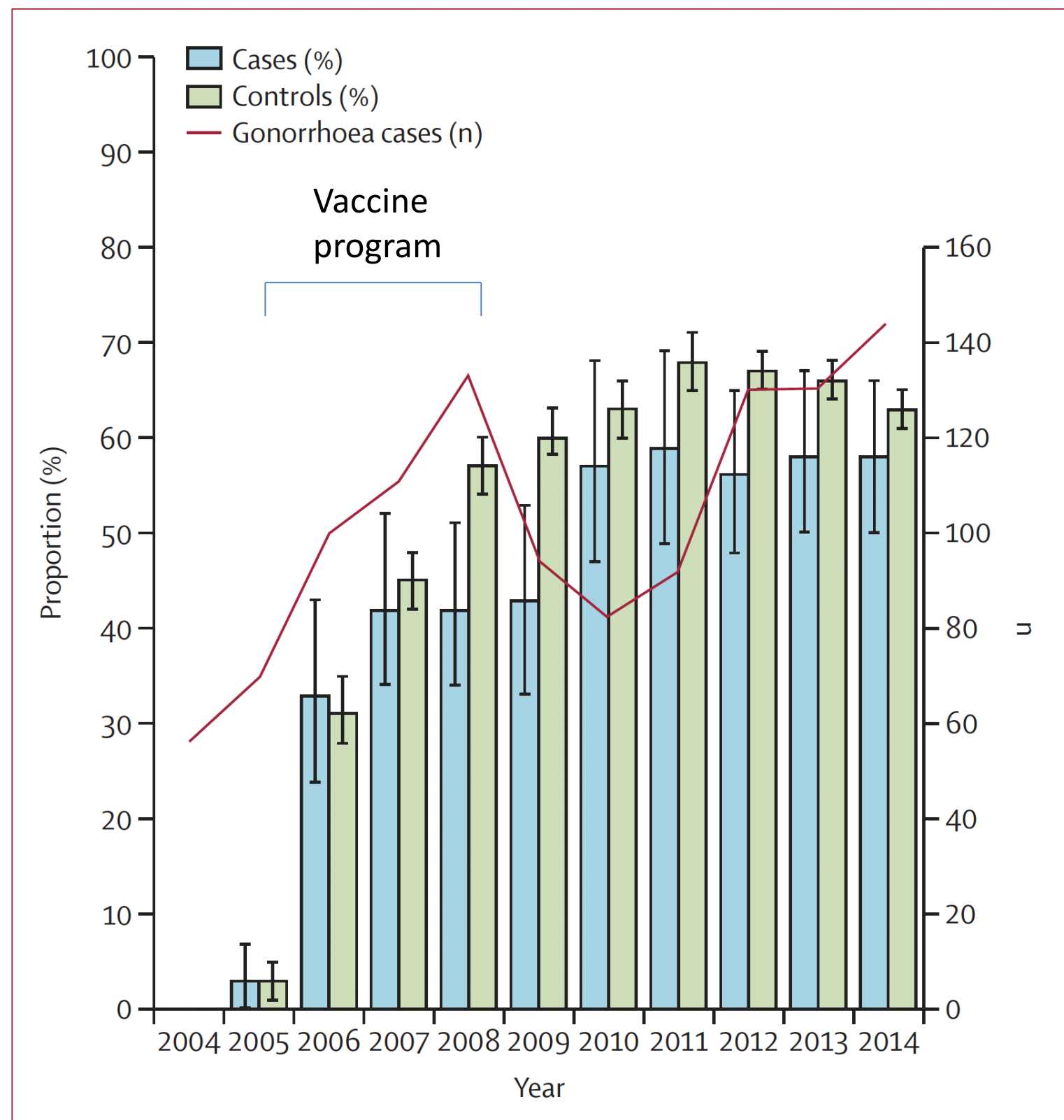
Development of vaccines for gonococcal infection: increasingly important and promising

- **AMR:** renewed focus on gonococcal vaccines given risk of infertility, adverse pregnancy outcomes, etc
- Evidence that vaccines against Ng are feasible
- New Zealand: after mass vaccination with MenB OMV vaccine, gonorrhoea cases declined
- Large case-control study: **estimated vaccine effectiveness 31% (21%-39%)**

Effectiveness of a group B outer membrane vesicle meningococcal vaccine against gonorrhoea in New Zealand: a retrospective case-control study



Helen Petousis-Harris, Janine Paynter, Jane Morgan, Peter Saxton, Barbara McArdle, Felicity Goodyear-Smith, Steven Black



Randomized controlled trials of 4CMenB vaccination to prevent gonococcal infection



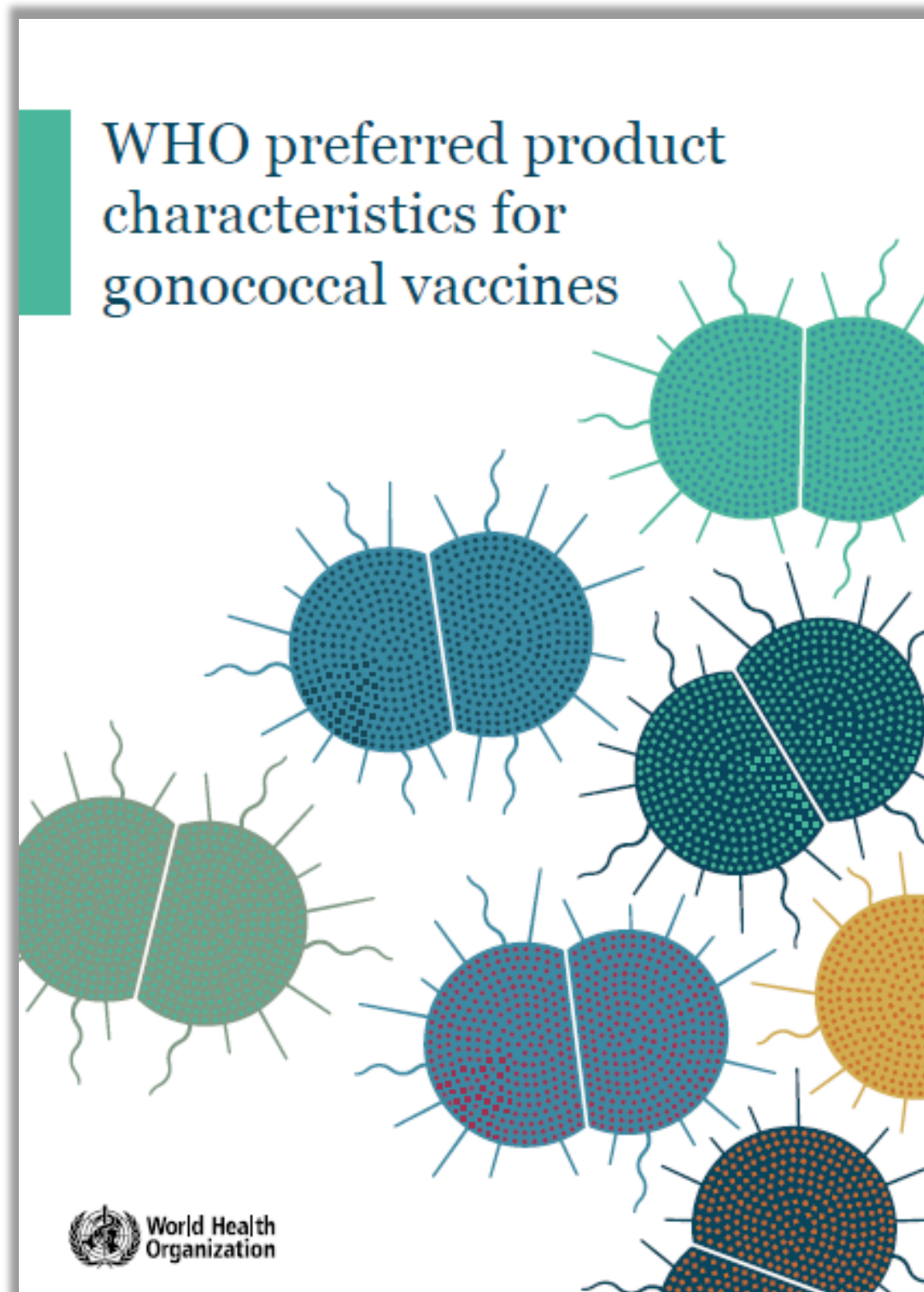
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Country	Phase	Population	n	Primary Outcome	Timing	Sponsor	Identifier
Australia	III	MSM	130	Time to infection (oropharyngeal, urogenital, anorectal)	Started Jan 2020	Gold Coast University Hospital	ACTRN12619001478101
Australia	III	MSM	730	Time to infection (oropharyngeal, urogenital, anorectal)	Started July 2021	Kirby Institute	NCT04415424
USA and Thailand	II	Men and women (18-50y)	2200	Incidence of infection (urogenital or anorectal)	Started Dec 2020	National Institute of Allergy and Infectious Diseases	NCT04350138

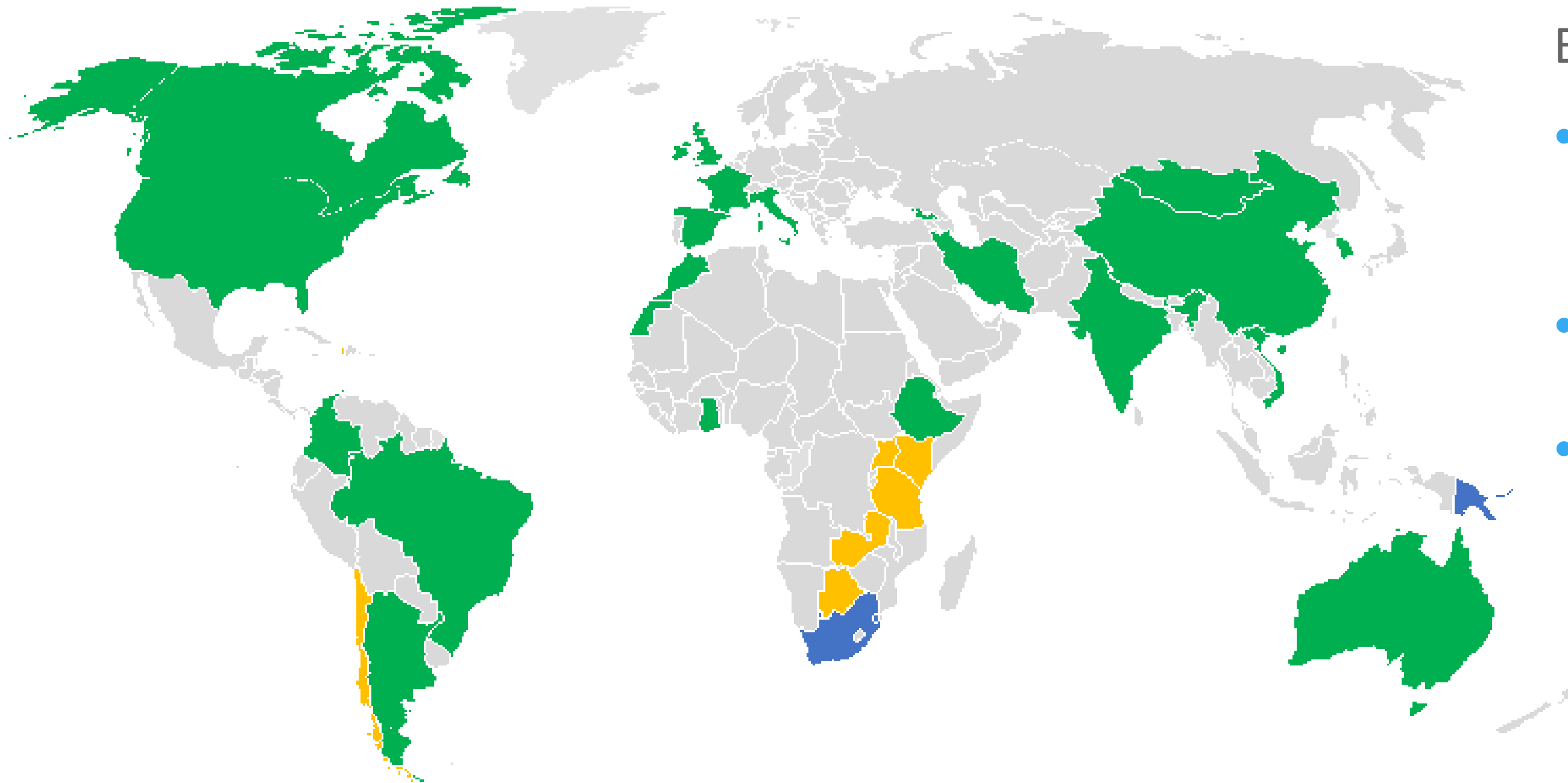
Delays due to COVID-19, but first results may be available as soon as Aug 2023

WHO undertaking efforts to assess value of gonococcal vaccines, define PPCs



- PPCs to be released this month, for ideal gonococcal vaccines + considerations for potential use of MenB vaccines
- Target populations = Young people (ages 10-24 yrs) AND/OR specific populations at higher risk
- Choice of target populations in different settings and potential use of MenB vaccines depend on:
 - Epidemiology
 - Vaccine efficacy
 - Duration of vaccine protection
 - Costs and cost-effectiveness
 - Existing programmes/platforms

Some countries have relatively high gonococcal infection prevalence in general populations



Gonorrhoea prevalence in women age 15-49.

■ ND ■ 0 - 0.99 % ■ 1.0 - 5.0 % ■ > 5.0 %

Epidemiology:

- Varies widely but highest in LMICs; many countries without data
- Peak incidence: age 20-24 yrs
- In ALL settings, higher in specific sub-populations

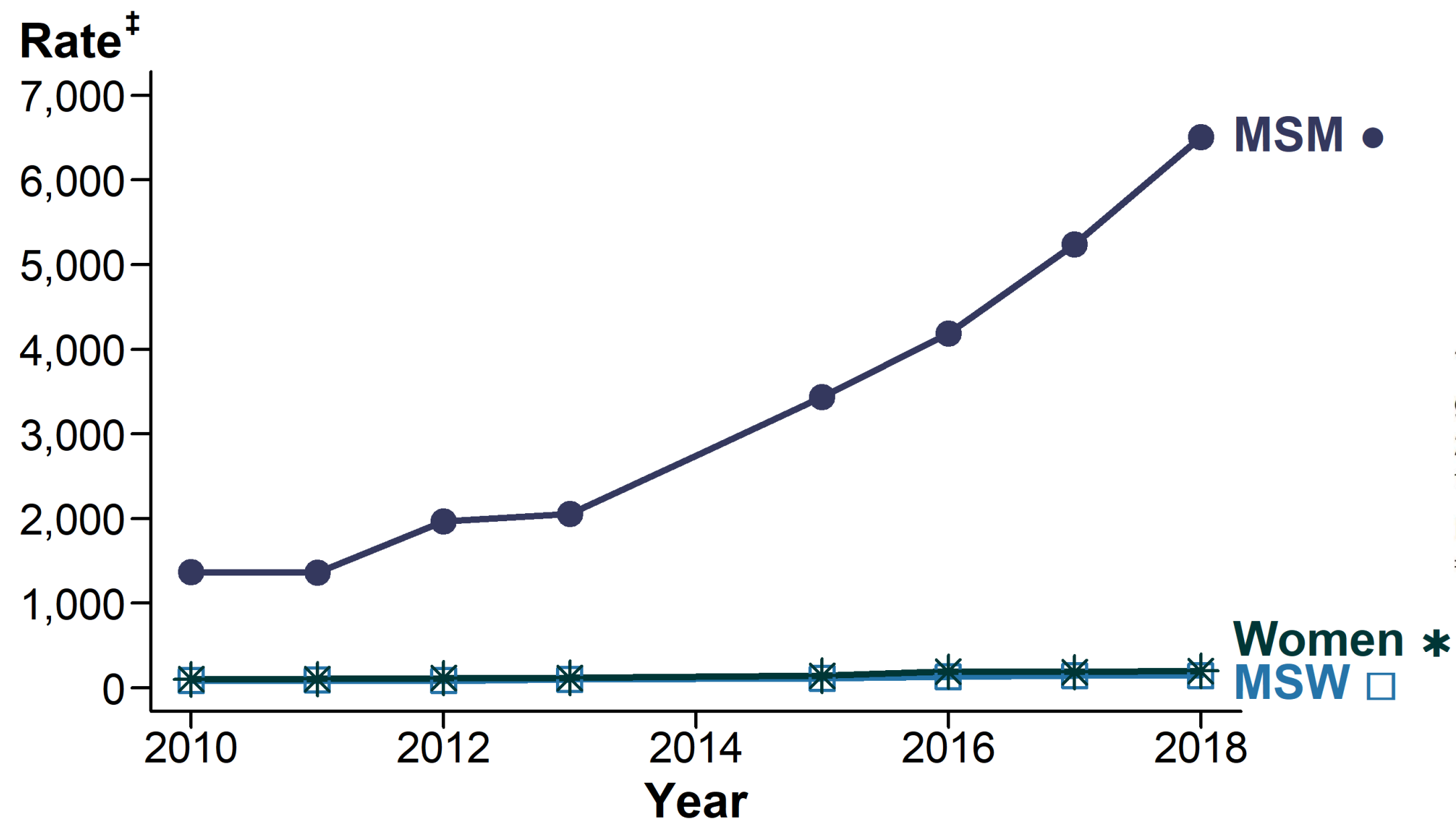
Rowley et al, manuscript in preparation.

Studies from general populations; samples collected in 2010 or later.

In many countries: low general population rates, but high rates in specific subpopulations

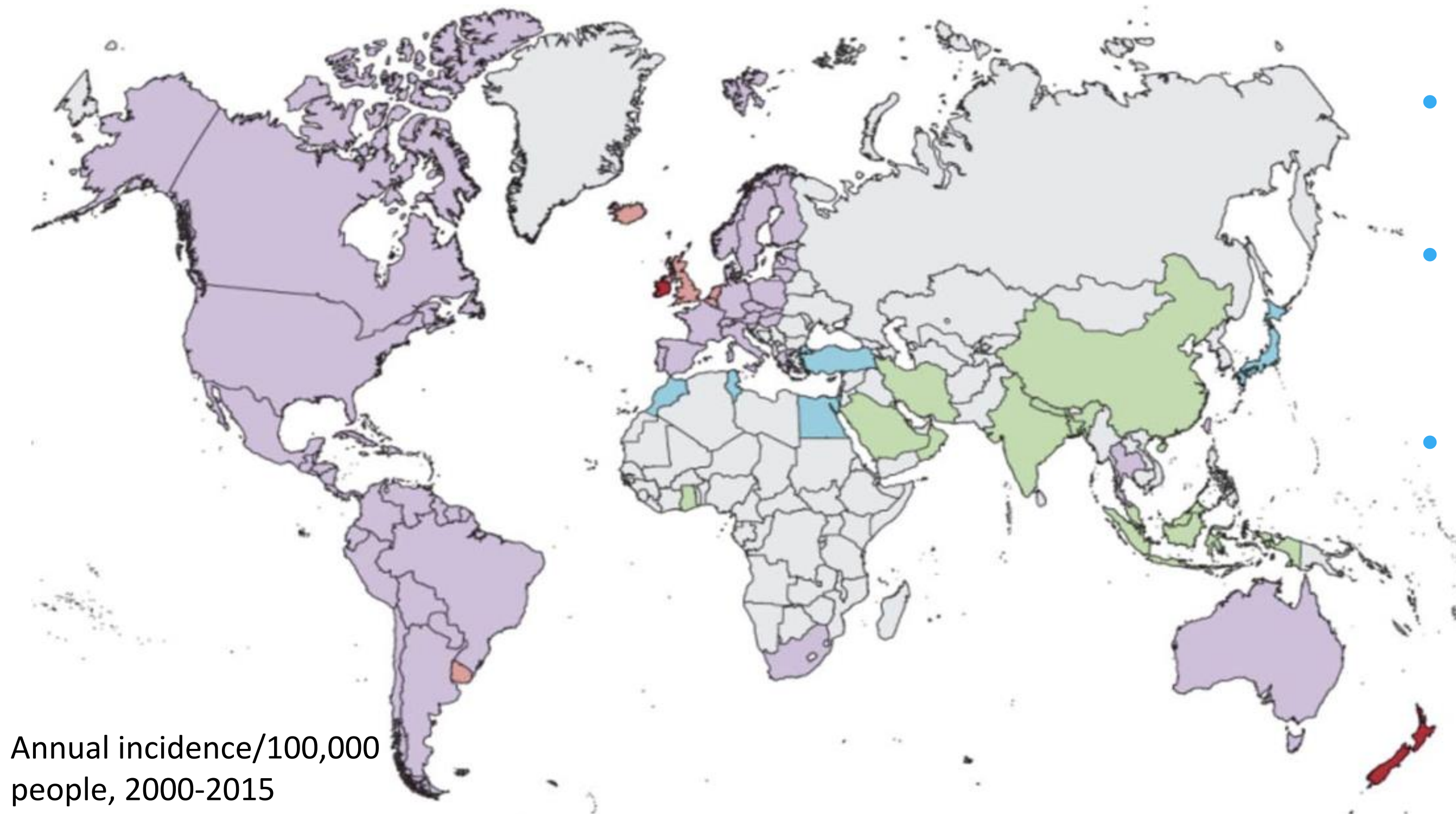
Figure 26. Gonorrhea — Estimated* Rates of Reported Gonorrhea Cases by MSM, MSW, and Women, STD Surveillance Network (SSuN)[†], 2010–2018, USA

MSM = men who have sex with men
MSW = men who have sex with women



Source: <https://www.cdc.gov/std/stats18/default.htm>

* Estimates based on interviews among a random sample of reported cases of gonorrhea (n=21,417); cases weighted for analysis. Data not available for 2014; 2013–2015 trend interpolated; trends lines overlap for MSW and women in this figure.
† Sites include Baltimore, Philadelphia, New York City, Washington State, San Francisco, and California (excluding San Francisco).
‡ Per 100,000.

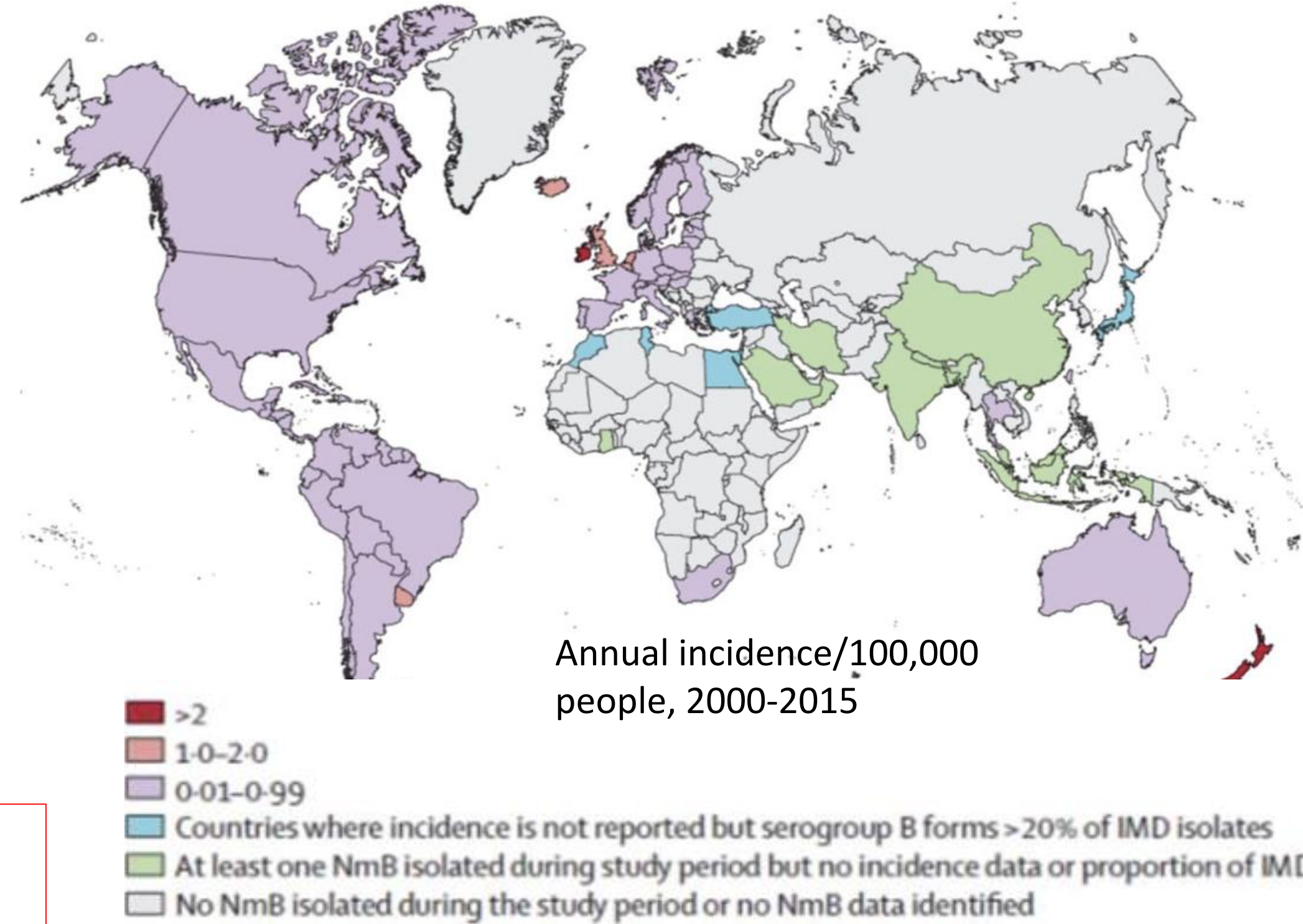
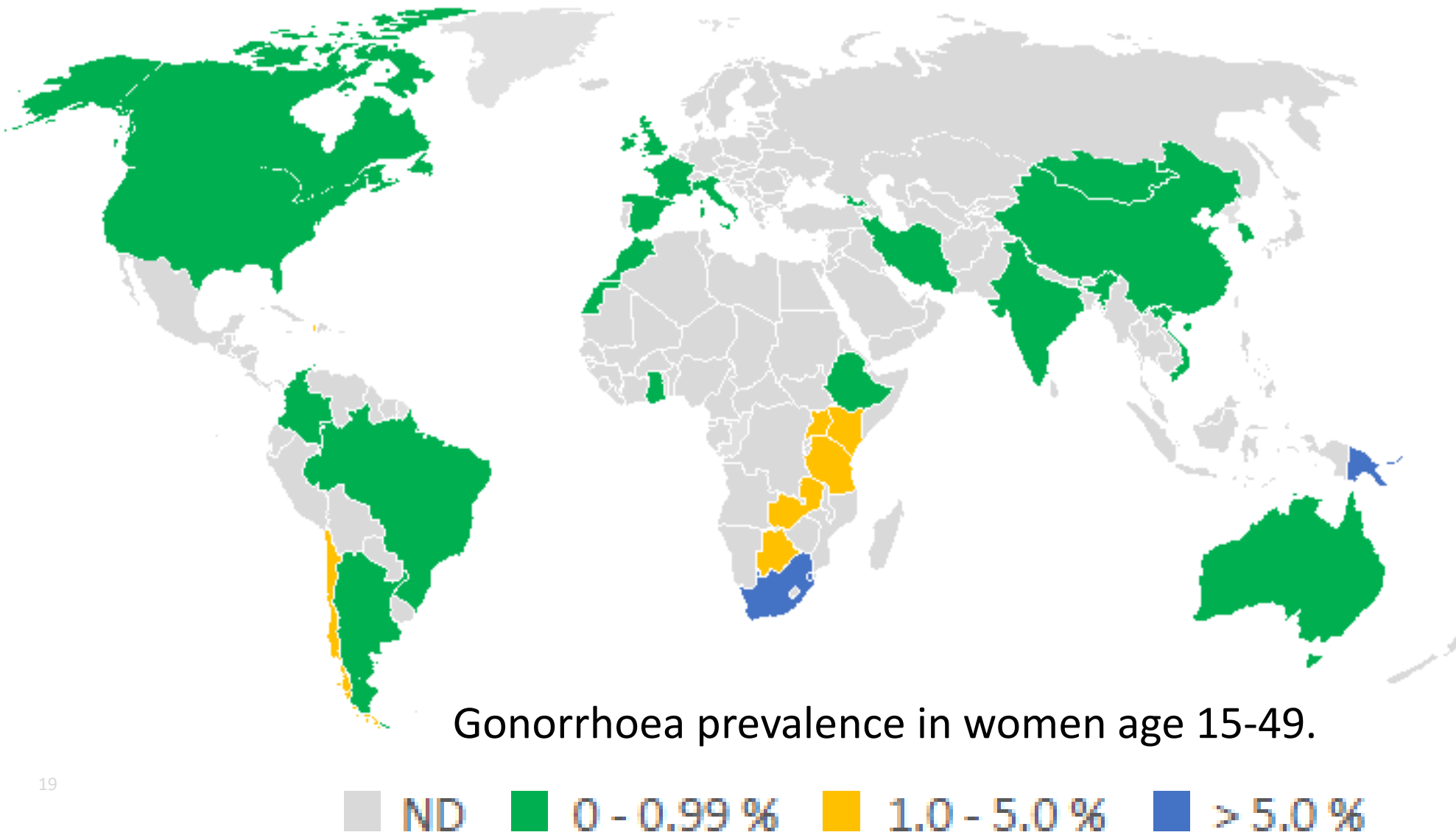


Annual incidence/100,000
people, 2000-2015



- Variability by location and over time; some unpredictable outbreaks
- Peak incidence in infants
- 4CMenB licensed in 45 countries, mostly HICs
- Only a fraction have it in NIPs or strong recommendations for use

Source: Sridhar et al, Lancet ID, 2015.



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- HICs w higher MenB incidence and vaccine use have low gonorrhoea prevalence
- LMICs w higher gonorrhoea are not using 4CMenB
- Some settings and target population overlap

Need better data for both!

Source: Sridhar et al, Lancet ID, 2015.

- Where MenB vaccine target populations might already include young people or key populations, overlapping with gonorrhoea target groups:
 - The potential to have an impact on both conditions strengthens argument for vaccinating for MenB
 - Duration of protection will be a consideration
- If preferred target populations in a setting comprise a small proportion of the population, expanding an existing vaccine may be more favorable than developing a de novo vaccine
 - HICs using MenB vaccines could easily expand to key populations



- For settings with very high gonococcal infection prevalence, even modest efficacy of 4CMenB against gonorrhoea could be beneficial
 - Expanding indications of a MenB vaccine to include gonococcal prevention could change cost-effectiveness and affect decisions to introduce it in more settings
- Delineating public health value in terms of both pathogens essential
 - Collecting better data on both conditions; modelling
 - Ongoing RCTs of MenB vaccines to prevent gonococcal infection will provide critical data



Thank you!



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