

For the Primer, visit doi:10.1038/s41572-019-0128-6

➔ Gonorrhoea is a sexually transmitted infection (STI) caused by the bacterium *Neisseria gonorrhoeae*. Infection typically results in urethritis in men and cervicitis in women; rectal and pharyngeal gonorrhoea are most frequently diagnosed in men who have sex with men (MSM). Disseminated (systemic) gonococcal infections are rare.

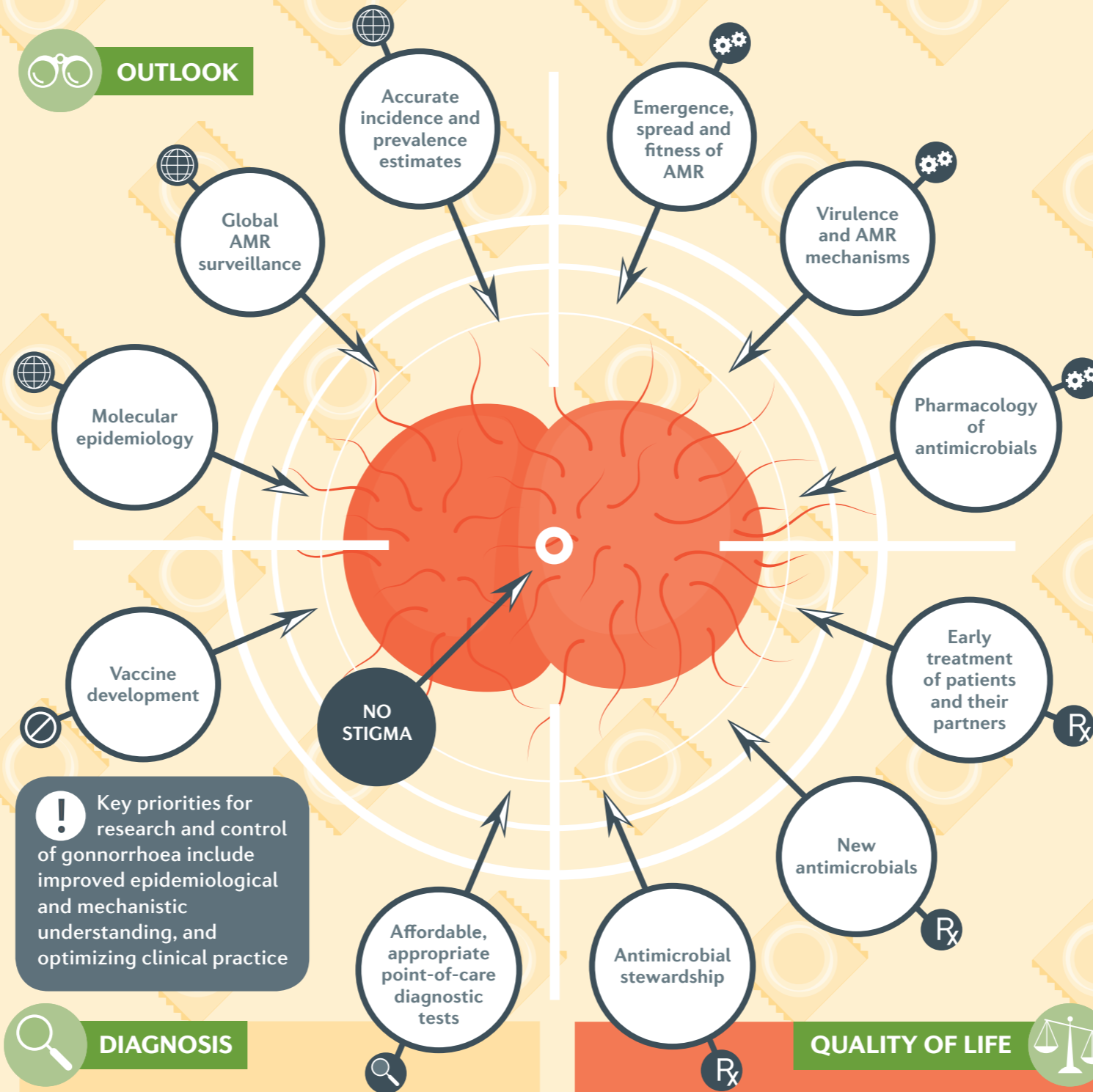
EPIDEMIOLOGY

The global incidence of gonorrhoea was estimated at ~87 million cases in 2016, and the incidence is rising — particularly in high-income settings. The prevalence varies widely both geographically and in different populations. Factors that contribute to this variability include sexuality and sexual orientation; social, cultural and economic status; access to health services; and, at the policy level, extent of resources allocated for the control of this global public health concern.

PREVENTION

No vaccine is available; thus, prevention relies on education on STIs, promotion of safe sexual behaviours, improved notification and treatment of sexual partners of affected individuals and targeted interventions (for example, screening) in vulnerable populations, such as sex workers, MSM and young individuals.

OUTLOOK



DIAGNOSIS

Syndromic diagnosis based on clinical manifestations can be valuable for men but is unreliable in women. Microbiological confirmation of infection can be achieved with light microscopy of Gram-stained samples, bacterial culture — which can also detect antimicrobial resistance (AMR) — or nucleic acid amplification tests.

QUALITY OF LIFE

Social stigma associated with STIs can elicit feelings of humiliation, embarrassment and fear in individuals diagnosed with gonorrhoea. Importantly, stigma can also lead to reluctance to seek testing for STIs and notify sexual partners, and to reduced levels of treatment compliance, thereby promoting transmission.

PATHOPHYSIOLOGY

N. gonorrhoeae is an obligate human pathogen; its colonization factors include pili and adhesins to attach to the mucosal epithelium, porins, and efflux pump systems that can act as AMR determinants. The bacteria have evolved to adapt to their host, and can effectively evade both innate and acquired immune responses. *N. gonorrhoeae* is naturally competent for transformation: it can acquire new DNA from other bacteria via horizontal genetic transfer, which also contributes to the efficient spread of AMR determinants between strains.

MANAGEMENT

Management aims to rapidly and accurately identify individuals with *N. gonorrhoeae* infection and provide timely treatment to prevent complications and transmission of infection. Antimicrobial therapy with parenteral ceftriaxone and oral azithromycin is the recommended first-line option. A single-dose systemic therapy to be provided in the health-care setting is the preferred way to deliver treatment, as patients are often lost to follow-up, particularly in resource-limited settings. The emergence of AMR in the bacteria has substantially reduced the number of effective drugs and threatens to undermine what progress has been made in disease control.

