Sexually Transmitted Infections

Adopting a Sexual Health Paradigm

Biomedical Interventions Can Help Accelerate National Progress in Reducing STIs

Publicly funded research should prioritize developing diagnostic tests and subsidizing and encouraging public-private partnerships to develop new, readily accessible antimicrobials and expedite vaccine development for high-priority STIs.

Biomedical interventions, such as diagnostic tests, pre- and post-exposure medications, and vaccines, are an effective set of tools to prevent, diagnose, and treat sexually transmitted infections (STIs). Technological advances have improved STI prevention and control. Yet, there is a need for additional attention and funding to develop new point-of-care tests, diagnostic tests for active syphilis, antimicrobials, and vaccines.

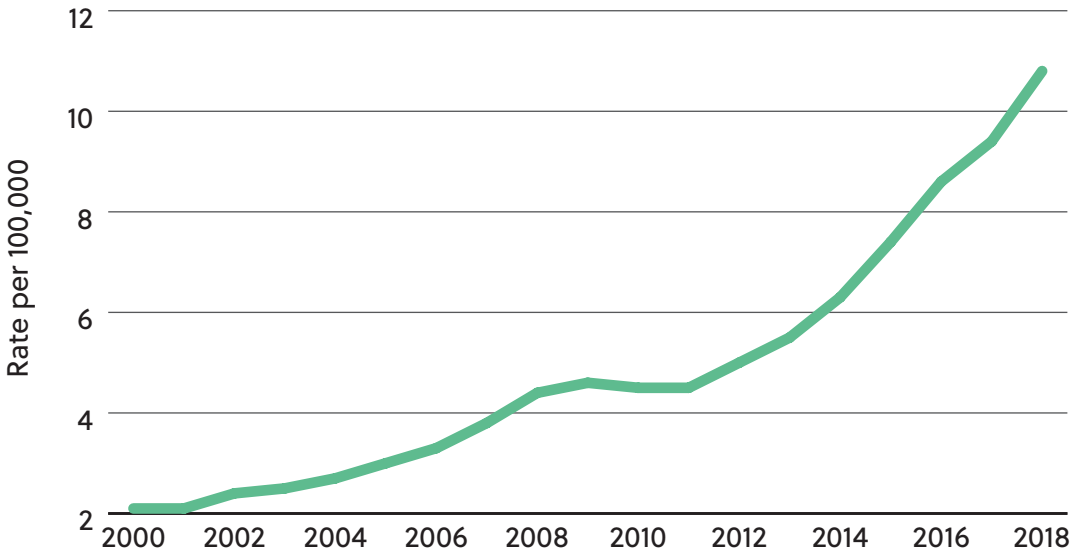
STI research and services remain underfunded at the federal, state, and local levels despite record high case rates. Investments in STI prevention and control would bolster the entire field of public health by increasing access to essential biomedical interventions.

"The reality is that we are all sexual creatures, so we are all at risk, and we should all be screened."

– Participant, lived experience panel

The report *Sexually Transmitted Infections: Adopting a Sexual Health Paradigm* explores how biomedical interventions can help accelerate national progress in reducing STIs.

Syphillis Infections 2000–2018



Vaccines for three common and reportable STIs—chlamydia, gonorrhea, and syphilis—do not exist. Their combined rates in 2018 were at an all-time high.

DID YOU KNOW?

- Point-of-care tests enable patients to be treated at the time of testing, which can shorten the time of infection and reduce transmission to partners. However, these effective tools for STI screening and diagnosis are underutilized and not common.
- Chlamydia, gonorrhea, and syphilis (and congenital syphilis) are preventable and treatable.
- There are effective nucleic acid amplification tests (NAATs) and point-of-care tests for diagnosing gonorrhea and chlamydia. However, the U.S. Food and Drug Administration has not cleared a commercially available NAAT for syphilis; there is an urgent need for new diagnostic tests for active syphilis, as diagnosis has not changed in 80-100 years.
- The pipeline for new antibiotic development has slowed. Meanwhile, multiple-drug resistant *Neisseria gonorrhoeae* is becoming more common and is a significant international public health challenge.
- There is only one antibiotic recommended globally as first-line treatment for gonorrhea. Clinical trials for two additional antibiotics continue through partnerships among the federal government, nongovernmental organizations, and pharmaceutical companies.
- There are effective vaccines for two STIs: hepatitis B and human papillomavirus; research continues for vaccines for other STIs.

A Persistent Problem

While STIs are largely preventable, **STI rates** have increased in all U.S. populations and **disproportionately affect youth, the LGBTQ+ community, women, and Black, Latino/a, American Indian/Alaska Native, and Native Hawaiian and Other Pacific Islander people.** These groups' risk of acquiring an STI is significantly affected by their access to health care, reliable transportation, and other social determinants of health.

There were an estimated **26 million new STI infections in the United States in 2018** – almost half were in people aged 15 to 24. These new cases totaled approximately $16 billion in direct medical costs.

The **rate of congenital syphilis in 2018 was 185% higher** than it was 2014, due to lapses and gaps in prenatal testing and treatment.

Many STIs can be asymptomatic and therefore undiagnosed and unreported. Long-term health effects of untreated STIs can include chronic pelvic pain, infertility, miscarriage or newborn death, cancers, and increased risk of HIV infections.

RECOMMENDED ACTION

The National Institutes of Health should prioritize research and development of point-of-care diagnostic tests to reduce the interval between testing and treatment, promote development of diagnostic tests that distinguish untreated, active syphilis from previously treated infection, and subsidize and encourage public–private partnerships to develop new, readily accessible antimicrobials and expedite vaccine development for high-priority STIs.

CONCLUSION

Biomedical interventions are one part of a holistic sexual health paradigm, along with psychosocial and structural interventions, to prevent and treat STIs. STI-related stigma may hinder investments in the development and marketing of biomedical prevention and control strategies. The National Institutes of Health, pharmaceutical companies, and other stakeholders should invest more in biomedical research to develop and disseminate new, modern advancements such as efficient diagnostic tests, novel antibiotics, and innovative vaccines, which would contribute to the health of all people in the United States.

To learn more about how biomedical tools and interventions can advance sexual health, see Chapter 7 of the report.

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