Clinical Management Strategies for Common Sexual and Reproductive Health Issues for Males

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Disclaimer

- The term ‘*woman*’ or ‘man’ may be used throughout this presentation. It should be read as including nonbinary, gender diverse and transgender people who have the sexual and reproductive organs appropriate for the information.

Objectives

- Recognize common male sexual and reproductive health issues.
- Develop individualized, evidence-based treatment plans using medications, lifestyle changes, and team-based care.
- Implement strategies to monitor progress and adjust interventions for complex cases.
- Communicate sensitively and effectively with patients, ensuring culturally competent, patient-centered care.

Sexually Transmitted Infections

- Most common symptoms requiring further evaluation, testing, and management based on most recent CDC guidelines
  - Pain
  - Lesions
  - Dysuria
  - Penile discharge
  - Malaise
  - Fever

Gonorrhea

- Often symptomatic.
- Highest risk
  - African Americans
  - Hispanics
  - Men having sex with Men
  - Adolescents
  - Southeastern United States
- Most common symptoms:
  - Dysuria
  - Mucopurulent discharge from urethra
- Management recommendation: Ceftriaxone 500 mg IM in a single dose for persons weighing less than 150 kg (330.7 lb.) OR 1 g if weighing more than 150 kg

Chlamydia

- Asymptomatic in 50% of men
- Can cause urinary symptoms of pain and frequency or urethral discharge
- Management recommendation: Doxycycline 100 mg orally 2 times/day for 7 days

Nongonococcal urethritis (NGU)

- Cluster of symptoms associated with inflammation/infection of urethra
- Non-specific diagnosis: Must rule out gonorrhea for treatment
- Lab: NAAT for GC/CHL (add trichomonas for areas with high prevalence)
- Management recommendation: Doxycycline 100 mg orally 2 times/day for 7 days

Epididymitis

- Infection of the epididymis
  - Common cause: Gonorrhea and chlamydia
  - Symptoms: Unilateral testicular pain, fever, swelling, and discharge
- Objective diagnosis includes positive finding of one of the following:
  - Gram stain of urethral secretions identifying more than two white blood cells (WBC) per oil immersion field
  - Positive leukocyte esterase test on first-void urine
  - Microscopic examination of sediment from a spun first-void urine demonstrating more than 10 WBC per high power field.
- Management recommendation
  - Presumptive therapy
  - If GC/CHL suspected
    - Ceftriaxone 500 mg IM in a single dose plus doxycycline 100 mg orally 2 times/day for 7 days
  - If enteric organisms (men who practice incentive anal sex) suspected
    - Ceftriaxone 500 mg IM in a single dose plus Levofloxacin 500 mg orally once daily for 10 days

Mpox (Monkey Pox)

- Systemic viral infection
- Common cause: Orthopoxvirus monkeypox (two subtypes: Clade I and Clade II)
- Symptoms: Rash (skin ulcers or blisters), fever, swollen lymph nodes, headache, muscle aches, fatigue
- Diagnosis: PCR and blood testing
- Management recommendations
  - Supportive therapy
  - Antivirals (tecovirimat/cidofovir/brincidofovir)
  - Vaccinia Immune Globulin Intravenous (VIG-IV)

Disorders of Testes---Cryptorchidism

- Undescended testes at birth that do not move into place after 3 months of life (usually diagnosed in first year of life through adolescence)
- Teste never grows or functions properly
- Increase risk of infertility and cancer
- Refer to urologist

Disorcer of Testes---Testicular torsion

- Sudden, acute, unilateral pain; can have nausea and vomiting
- Very rarely chronic pain
- Medical emergency if no medical attention in 12 hours
  - Could lead to needing teste removed due to lack of blood flow
- Most common in puberty and in cases of trauma
- Treatment: Surgery to untwist

Disorder of Testes---Spermatocele

- Abnormal mass which is a fluid-filled sac in epididymis
- Noncancerous and usually painless
- Transillumination test
  - Flashlight on scrotum to identity fluid versus solid mass
- Rarely needs treatment

Disorders of Testes---Hydrocele

- Most common testicular issue
- Swelling and pain
  - Caused by fluid trapped in sheath around testicle caused by inflammation or injury/trauma.
- Often resolves on its own
- Refer to urologist for management.

Disorder of Testes--- Varicocele

- Compliant: fullness and dull to sharp pain without radiation
- Evaluation: Inspection and palpation
  - Nontender, soft scrotal mass separates from testicle with dilated veins (“bag of worms”); usually left side
  - Worse when patient is standing and performs the Valsalva maneuver
  - Often unpalpable when in supine position
  - Grading system
    - Grade 3 is visible on inspection
    - Grade 2 when felt with easy palpation
    - Grade 1 when only palpable with Valsalva maneuver
  - Color Doppler ultrasound is standard to evaluate mass and rule out cancer and other testicular mass differentials.
- Management:
  - Surgery indicated for pain and fertility issues.
    - 30-minute procedure, 2 to 3-week recovery, over 90% successful to decrease pain and increase sperm concentration

Testicular Cancer (ACS, 2021)

- About 9,470 new cases and 440 deaths a year
- Mass in testes
  - Often asymptomatic
  - Dull pain and heaviness
- Most commonly affects young and middle-aged men
  - 50% in men between 20 and 34 years old
- Risk factors
    - History of cryptorchidism (undescended testicle)
    - Age
    - African American/Asian American
    - Family history/personal history

Penile Disorders- Priapism (AUA/SMSNA, 2022)

- Prolonged and uncontrolled erection unrelated to sexual stimulation, lasting more than 4 hours
- Classification
  - Ischemic (low-flow, emergency)
  - Non-ischemic (high-flow, non-emergent)
- Diagnosis requires emergent evaluation with emergency room or urology provider to determine ischemic vs non-ischemic
  - Based on thorough history and physical exam, corporal blood gas, and penile Doppler ultrasound
- Causes
  - Ischemic
    - Sickle cell disease, hematologic/oncologic disorders, medications (trazodone, antipsychotics), and intracavernosal injections.
  - Non-ischemic
    - Trauma leading to unregulated arterial inflow and cavernous artery fistula
- Risk factors: Hematologic diseases (especially sickle cell disease), use of intracavernosal vasoactive agents, pelvic/penile trauma, medications (psychotropics, antihypertensives)
- Management
  - Intracavernosal phenylephrine and aspiration with or without irrigation
  - Surgery (conservative management usually unsuccessful)

Penile Disorders--- Peyronie's Disease

- Congenital penile curvature resulting from disproportionate development of the tunica albuginea of the corporal bodies
  - Medical and sexual history
  - curvature more apparent with erections
  - sexual activity difficult and/or painful
- Conservative treatment is focused on early stage of the disease to relieve pain and prevent disease progression.
  - Oral treatment with Phosphodiesterase type 5 inhibitors or NSAIDs for pain
  - Surgical treatment for significant penile deformity and difficulty with intercourse

Penile Disorder-Phimosis

- Inability to retract the foreskin (prepuce) in uncircumcised male
- More often in children and usually resolves with age
- Pathologic (congenital) phimosis secondary to infection, inflammation, or scarring.
- Lichen sclerosis is a common cause
- Evaluated with inspection, symptoms may include swelling, discoloration, pain, and discharge.
- Management
  - Topical corticosteroids to soften the foreskin or gradual/gentle stretching of foreskin over time
  - Circumcision is most effective treatment, use shared decision making with healthcare provider
- Complications
  - Posthitis---foreskin inflammation; Treatment with topical corticosteroid cream or gel
  - Balanitis/Balanoposthitis---inflammation of both foreskin and/or glans
    - considering assessing for yeast, gonorrhea and/or chlamydia (STIs)
  - Paraphimosis---Inability to retract foreskin over the glans
    - Medical emergency requiring urological evaluation and reduction, possible dorsal slit
  - Increased urinary tract infection risk

Prostate Disorders---Prostatitis

- Inflammation of rectal lining which can be acute or chronic
- Symptoms:
  - Pain
  - GI: Diarrhea or sensation to have bowel movement
  - Bleeding
  - Discharge/mucus
- MUST rule out FIRST:
  - Sexually transmitted infection (STI)----most common cause
  - GI disorder
  - History of radiation treatment
- Diagnostic Testing: Complete blood count (CBC) to assess hemoglobin (anemia) and white blood cells (WBC; infection), stool test for blood, and STI screenings
- Management dependent upon on causative factor
  - Presumptive therapy
  - Management recommendation (2021 CDC guidelines)
    - Ceftriaxone 500 mg IM in a single dose for persons weighing less than 150 kg (330.7lb.) OR 1 g if weighing more than 150 kg plus doxycycline 100 mg orally BID for 7 days. Extend doxycycline to 21 days in the presence of bloody discharge, perianal or mucosal ulcers and rectal chlamydia

Prostate Disorders---Benign prostatic hypertrophy/hyperplasia (BPH)

- Common hormonal changes as males age causing:
  - Hypertrophy—increased size of existing cells
  - Hyperplasia—increased quantity of normal size cells
- Symptoms:
  - Urinary systems: frequency, urgency, weak stream, chronic urinary infections, nocturia, and incontinence
    - Hematuria should be evaluated for bladder cancer
    - Emergent if acute urinary retention, requires medical attention immediately.
- Diagnosis---History and urine analysis and culture
- Management includes
  - How much is it effecting their life?
  - Referral to urologist
  - Medications: Alpha blockers or 5-alpha reductase inhibitors
  - Surgical: Transurethral resection, newer laser techniques, many outpatient options

Prostate Cancer

- In 2022, there were 255,395 new cases of prostate cancer reported in the United States.
- In 2023, 33,881 males died from prostate cancer
- Risk factors
  - Age
  - African American
  - Family history
- Symptoms
  - Urinary issues
  - Pain---pelvis/back/hip
  - Bleeding with ejaculation
- Diagnosis
  - Can be asymptomatic even in advanced stages
  - **Any mass palpated with digital ano-rectal examination (DARE) should be referred to a urologist and evaluated for cancer.**
- Biopsy is the gold standard for diagnosis.

What about the PSA?

- Measures PSA protein levels in blood
- Not recommended for routine screening in all men due to risks of overdiagnosis and unnecessary treatment.
- Current guidelines (USPSTF, NCI) recommend shared decision-making for men aged 55–69 and generally advise against screening for men over 70.
- Limitations: Elevated PSA can occur from benign conditions (BPH or prostatitis), leading to false positives and unnecessary biopsies.
- Advancements:
  - IsoPSA---blood test approved by the FDA in 2025
  - Improve specificity by analyzing PSA protein structural variants
  - Included in major guidelines (NCCN, AUA)
  - Helps distinguish benign PSA elevations from high-grade cancer, reducing unnecessary biopsies.

Infertility

- Inability for male partner to conceive with female partner after 12 consecutive months of unprotected intercourse
  - Primary or secondary cause in about 50% of all infertile couples
- Causes are hormonal or gonadal

Infertility-Hormonal Causes

- Hypogonadism: Severe deficiency in gonadotropin-releasing hormone (GnRH) which leads to decrease release of testosterone
- Pituitary tumors
- Congenital lack of luteinizing hormone/follicle-stimulating hormone (LH/FSH; pituitary problem from birth)
- Anabolic (androgenic) steroid abuse
- Low testosterone

Infertility-Gonadal Causes

- Varicocele
- Hypospadias
- Cryptorchidism
- Retrograde ejaculation
  - Sperm enters bladder instead of exiting through penis due to weak bladder neck.
  - Causes: Nerve damage secondary to other medical illness, medication from benign prostatic hyperplasia (BPH), or bladder surgery
  - Not harmful but decreases fertility opportunities
  - Diagnostic test: Post-ejaculation urinalysis which identifies and measures sperm in urine after ejaculation.
- Sperm health (analysis described in the following)
- Blockage of sperm transport
  - Prostate-related problems
  - Absence of vas deferens
  - Vasectomy
- Environmental and lifestyle choices
  - Exposure to smoking, drugs, chemicals, toxins, or medications
  - Bicycling, overheat, and trauma
- Aging
- STIs
- Torsion (twisting of the testis in scrotum)
- Overheating of testicle (hot tubs and tight underwear)
- Mental health issues

Semen Analysis

- Most common lab test for male infertility to assess sperm health
- If abnormal test repeat in 4-6 weeks
- Most often collected by patient through masturbation
- Most common to give instructions and cup at office and done at home, but must be kept warm and returned to office/lab within 60 minutes
- Must be abstinent for 2 days prior to test

Normal Semen Analysis	
CHARACTER	**LOWER LIMIT**
Volume	1.5 mL
pH	7.2
Concentration	15 x 106 spermatozoa/mL
Quantity	39 x 106 spermatozoa/ejaculate
Mobility	40%
Forward progression	32%
Normal morphology	4%
Agglutination	Absent
Viscosity	Less than 2
Source: American Society for Reproductive Medicine. (n.d.) Semen analysis. https://www.asrm.org/topics/topics-index/semen-analysis/	

Common Terms with Semen Analysis

Term	Definition
Aspermia	No semen present in the ejaculate.
Azoospermia	No sperm cells in the semen.
Oligozoospermia	Low sperm count in the semen.
Asthenozoospermia	Poor sperm movement or motility.
Teratozoospermia	High number of abnormally shaped sperm.
Normozoospermia	Normal sperm count, shape, and movement.
Retrograde Ejaculation	Semen flows into the bladder instead of out during ejaculation.

Infertility---Other lab tests to consider

- Hormone testing
  - Prolactin and thyroid
- Genetic testing
  - Karyotype testing to rule out chromosomal disorder.
- Initial evaluation should **NOT** include testicular biopsy, ultrasound, or antisperm antibody (ASA) testing.
  - Evidence does not support

Sexual Dysfunction

- Male sexual dysfunction refers to a group of disorders that interfere with a man's ability to experience satisfactory sexual activity.
- Updated *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (*DSM-5)* criteria for all Sexual Dysfunction Disorders (American Psychiatric Association [APA], 2013)
  - Gender specific---ONLY 4 for males
  - Must experience condition 75% to 100% of the time
  - Minimum duration of 6 months
  - Disorder must have caused “significant distress”
  - The disorder should not be better explained by:
    - Nonsexual mental disorder
    - Consequence of severe relationship distress (e.g., partner violence)
    - Other significant stressors
- Specifiers used: Mild, moderate, or severe

Sexual Dysfunction---R/O Endocrine Causes

- Fasting glucose and Hemoglobin A1C
- Thyroid stimulating hormone (TSH)
- Prolactin
- LH/FSH: Inverse relationship with testosterone could indicate hypogonadism.
- Testosterone deficiency
  - Recommended cut-off for diagnosis of low testosterone should be a total testosterone level below 300 ng/dL
  - Diagnosis requires two total testosterone measurements on separate occasions in an early morning combined with symptoms (decrease libido, erectile issues, infertility)
  - Increase risk for cardiovascular disease
  - Management often testosterone therapy (Must rule out anemia and prostate cancer prior to initiation)

Sexual Dysfunction---Neurological causes

- Dysfunction on central nervous system and nerves that innervate penis (i.e., stroke, epilepsy, spinal cord trauma)
  - Cardiovascular
  - Decrease efficiencies and occlusions of vascular system
  - Mental health
    - Depression
    - Posttraumatic stress disorder
    - Anxiety
    - History of sexual assault/abuse
  - Medications
    - Antihypertensives, antidepressants, and antiandrogens
  - Lifestyle
    - Caffeine, nicotine, drugs, alcohol, and obesity
  - Ejaculation issues (premature/retrograde/delayed)
  - Health event: Medical or psychosocial
  - Benign prostatic hyperplasia

Sexual Dysfunction---Management Strategies

- Order appropriate tests and labs.
- Assess and treat for infections (STIs).
- Assess and treat any sexual health pathophysiology.
- Hormone treatment if indicated
- Discuss lifestyle changes.
  - Weight, smoking, increase frequency of intercourse, timing of sex, avoid lubricants, activities causing increase in temperature or pressure to testicles
  - Educate on coping techniques, stress management, support, resources, and communication strategies.
- Referral options
  - Assisted reproductive technology
  - Urologist
  - Mental health

Male Hypoactive Sexual Desire Disorder

- Frequent deficient (or absent) sexual fantasies and/or desire for sexual activity
- Caused by psychosocial issues, medications, low testosterone, in conjunction with other sexual health issue, partner issues, and/or drugs/alcohol
- Diagnosis made by history (usually secondary)
- Management options
  - Lifestyle modifications
  - Psychotherapy with selective serotonin reuptake inhibitor (SSRI)
    - Alter medications
    - Add bupropion if already on SSRI
  - Change antihypertensive
  - Manage chronic opioid use
  - Considering adding testosterone

Delayed Ejaculation

- Unable to ejaculate during sexual activity specifically after 25 minutes to 30 minutes of continuous sexual stimulation
- Criteria: Occurs almost all the time, over at least 6 months, causes individual distress; rule out secondary to other medical/surgical condition, medications, psychological issues including drug/alcohol abuse
  - Uncommon, not much research
  - Diagnosis made by History (Self-reported)
  - Lifelong versus acquired
  - General versus situational
- Testing: Check prolactin/thyroid-stimulating hormone (TSH) to rule out hormonal issue
- Management
  - Psychological intervention
    - Performance anxiety
    - Relationship issues
    - Stress
    - Traumatic event
  - Environmental issues---drugs, alcohol, smoking
  - Review medications and treat any underlying medical conditions
  - No Medication options currently FDA approved

Premature Ejaculation

- Cause: Psychological (anxiety) or biogenic (less defined)
- Define as three criteria
  - Early ejaculation during vaginal intercourse, inability to delay or control, and marked distress
  - Unable to control orgasm, and climaxes in less than 1 minute after vaginal penetration
  - Only defined as a disorder in the case of vaginal intercourse as a time duration for oral or manual stimulation has not been established
- Diagnosis
  - Acquired (psychological) versus lifelong (genetic)
  - Global versus situational
- Management: None approved by the FDA for premature ejaculation; research, mounting evidence and off label options:
  - SSRI are first line (dapoxetine)
  - Tramadol
  - Topical anesthetics: Lidocaine
  - Prostaglandin cream
  - Phosphodiesterase-5 inhibitors
  - Non-pharmacologic:
    - Behavioral and psychological therapy
    - Acupuncture

Erectile Dysfunction

- Define: Recurrent inability to achieve or maintain an adequate erection during partnered sexual activities
- Diagnosis based on history
- Causes: Blocked blood flow to penis
- Risk factors: Age and co-existing medical conditions (i.e., cardiovascular, depression, diabetes)
- Pharmalogical Management
  - First line: Start phosphodiesterase-5 inhibitors (PDE-5)---NEXT SLIDE
- Non-pharamological
  - Eroxon (MED3000) – First FDA-cleared OTC topical gel that works in 10 minutes
  - Shockwave Therapy (REGENwave) – Non-invasive treatment with 80% improvement rates
  - Vertica – Home-use radiofrequency device with 85% success rate
  - REGENmax Protocol – Comprehensive 4-step treatment combining multiple technologies
  - Behavioral and psychotherapy

Phosphodiesterase-5 inhibitors (PDE-5)

- MOA: Inhibits relaxation of blood vessel smooth muscle and increases blood flow to penis
- Contraindicated: Nitrates
- Use with caution: Alpha-adrenergic and alpha-blockers
- Side effects: Low blood pressure, Indigestion, Flushing, Headaches, Vision problems, and hearing issues
- Medical emergency: Priapism, which is an erection lasting more than 4 hours

Most Common PDE-5

Generic / Brand	Adult Dosage	Key Points
Sildenafil (Viagra)	25 mg, 50 mg, 100 mg tablets	• Take once daily • 30 min–4 hrs before sex • Take with food • Longest safety record • Most side effects
Tadalafil (Cialis)	2.5 mg, 5 mg, 10 mg, 20 mg tablets	• 30 min before sex • Can be taken daily • With or without food • Lowest dose option • Longest duration (36 hrs)
Avanafil (Stendra)	50 mg, 100 mg, 200 mg tablets	• 200 mg: 15 min before sex • Lower doses: 30 min before • Max 1 dose/day • Fastest onset • Shortest duration

Tips for Provider Communication

- Frame preventive care as proactive and responsible rather than implying vulnerability.
- Be aware of modesty concerns during physical exams
- Validate feelings without reinforcing stereotypes.
- Avoid phrases like “man up” or assumptions about strength.
- Normalize the conversation by acknowledging societal pressures on men.

References

- Abdel-Hamid, I. A., & Ali, O. I. (2018). Delayed ejaculation: Pathophysiology, diagnosis, and treatment. *The World Journal of Men's Health*, *36*(1), 22–40. https://doi.org/10.5534/wjmh.17051
- Althof, S. E., McMahon, C. G., Waldinger, M. D., Serefoglu, E. C., Shindel, A. W., Adaikan, P. G., Becher, E., Dean, J., Giuliano, F., Hellstrom, W. J., Giraldi, A., Glina, S., Incrocci, L., Jannini, E., McCabe, M., Parish, S., Rowland, D., Segraves, R. T., Sharlip, I., & Torres, L. O. (2014). An update of the international society of sexual medicine's guidelines for the diagnosis and treatment of Premature Ejaculation (PE). *Sexual Medicine*, *2*(2), 60–90. https://doi.org/10.1002/sm2.28
- American Cancer Society. (2021). *Surveillance, Epidemiology, and End Result (SEER) 18 registries, National, Cancer Institute, 2020*. Retrieved November 18, 2021 at https://www.cancer.org/cancer/testicular-cancer/about/key-statistics.html
- American Psychiatric Association, DSM-5 Task Force. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). American Psychiatric Publishing, Inc.
- Asafu-Adjei, D., Judge, C., Deibert, C. M., Li, G., Stember, D., & Stahl, P. J. (2020). Systematic review of the impact of varicocele grade on response to surgical management. *Journal of Urology*, *203*(1), 48–56. https://doi.org/10.1097/JU.0000000000000311
- Bivalacqua T. J., Allen B. K., Brock G. B., Broderick, G. A., Chou, R., Kohler, T. S., Mulhall, J. P., Oristaglio, J., Rahimi, L. L., Rogers, Z. R., Terlecki, R. P., Trost, L., Yafi, F. A., & Bennett, N. E. (2022). The diagnosis and management of recurrent ischemic priapism, priapism in sickle cell patients, and non-ischemic priapism: An AUA/SMSNA guideline. *J Urol.*, *208*(1), 43-52. https://doi.org/ https://doi.org/10.1097/ju.0000000000002767
- Brannigan RE, Hermanson L, Kaczmarek J, Kim SK, Kirkby E, Tanrikut C. Updates to male infertility: AUA/ASRM guideline (2024). J Urol. Published online August 15, 2024. doi:10.1097/JU.0000000000004180. https://www.auajournals.org/doi/10.1097/JU.0000000000004180
- Centers for Disease Control and Prevention. *U.S. Cancer Statistics Prostate Cancer Stat Bite*. https://www.cdc.gov/united-states-cancer-statistics/publications/prostate-cancer-stat-bite.html
- Mulhall J. P., Trost L. W., Brannigan R. E., Kurtz, E. G., Redmon, J. B., Chiles, K. A., Lightner, D. J., Miner, M. M., Murad, M. H., Nelson, C. J., Platz, E. A., Ramanathan, L. V., & Lewis, R. W. (2018). Evaluation and management of testosterone deficiency: AUA guideline. *J Urol., 200*(2), 423-432. https://doi.org/ 10.1016/j.juro.2018.03.115
- Practice Committee of the American Society for Reproductive Medicine and the Practice Committee of the Society for Reproductive Endocrinology and Infertility, Penzias, A., Azziz, R., Bendikson, K., Falcone, T., Hansen, K., Hill, M., Jindal, S., Kalra, S., Mersereau, J., Reindollar, R., Shannon, C. N., Steiner, A., Tanrikut, C., Taylor, H., & Yauger, B. (2022). Optimizing natural fertility: a committee opinion. *Fertility and sterility*, *117*(1), 53–63. https://doi.org/10.1016/j.fertnstert.2021.10.007
- Secor, M. C., & Holland, A. (2024). *Advanced health assessment of women: Skills, procedures, and management* (5th ed.). Springer Publishing Company
- U.S. Preventive Services Task Force. (2018). *Prostate cancer: Screening.* Retrieved from https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/prostate-cancer-screening
- Wei, J. T., Barocas, D., Carlsson, S., et al. (2023). *Early detection of prostate cancer: AUA/SUO guideline. Journal of Urology, 210*(1), 45–53. Retrieved from https://www.auanet.org/guidelines-and-quality/guidelines/early-detection-of-prostate-cancer-guidelines
- Workowski, K. A., Bachmann, L. H., Chan, P. A., Johnston, C. M., Muzny, C. A., Park, I., Reno, H., Zenilman, J. M., & Bolan, G. A. (2021). Sexually transmitted infections treatment guidelines, 2021. MMWR. Recommendations and Reports: Morbidity and Mortality Weekly Report. Recommendations and reports/ Centers for Disease Control, *70*(No. RR-4), 1–187. . https://doi.org/ doi: 10.15585/mmwr.rr7004a1