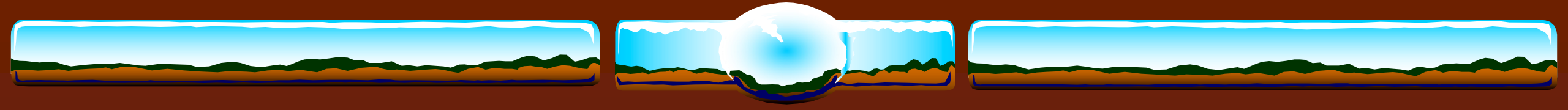


COVID-19/MPX Clinical Update

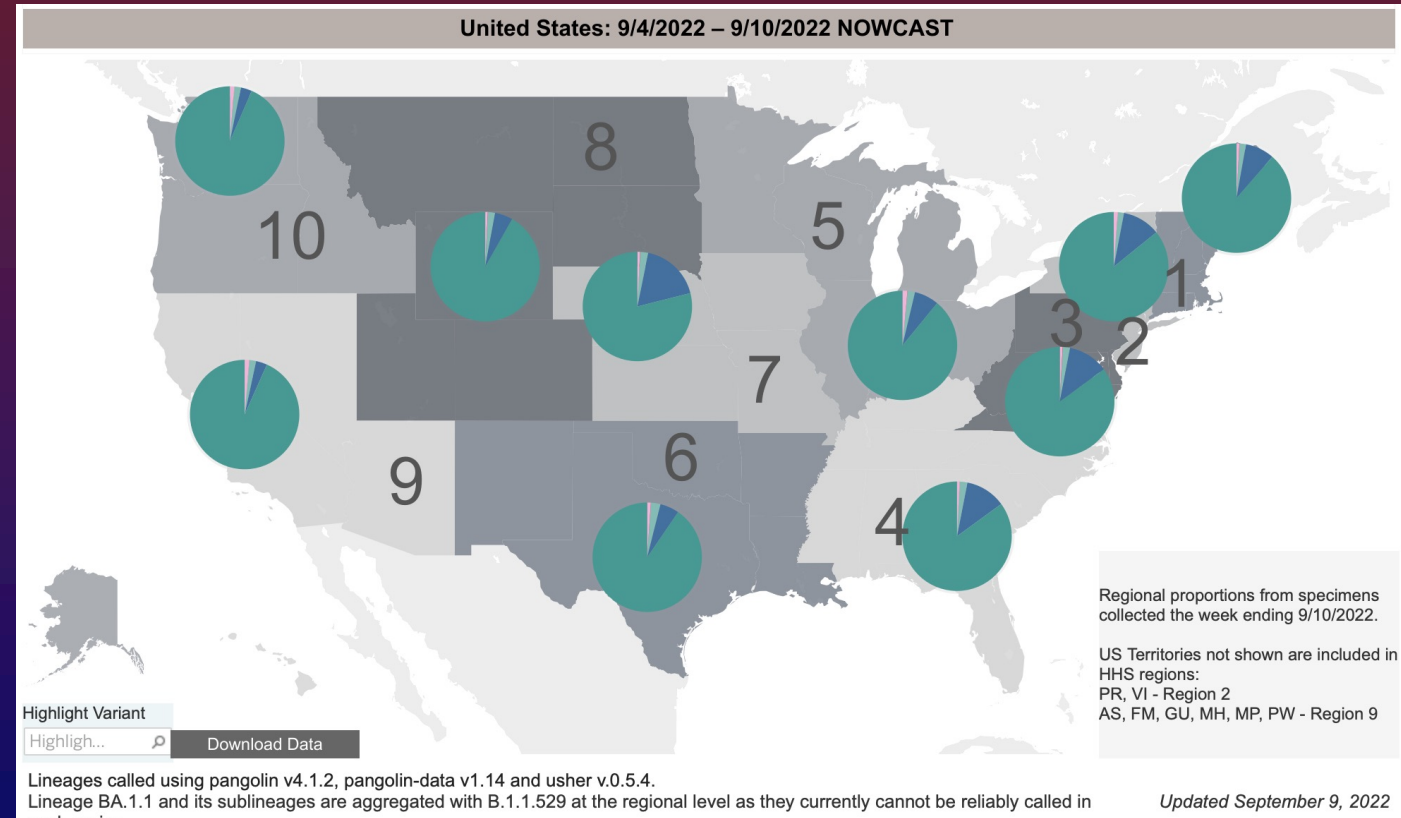
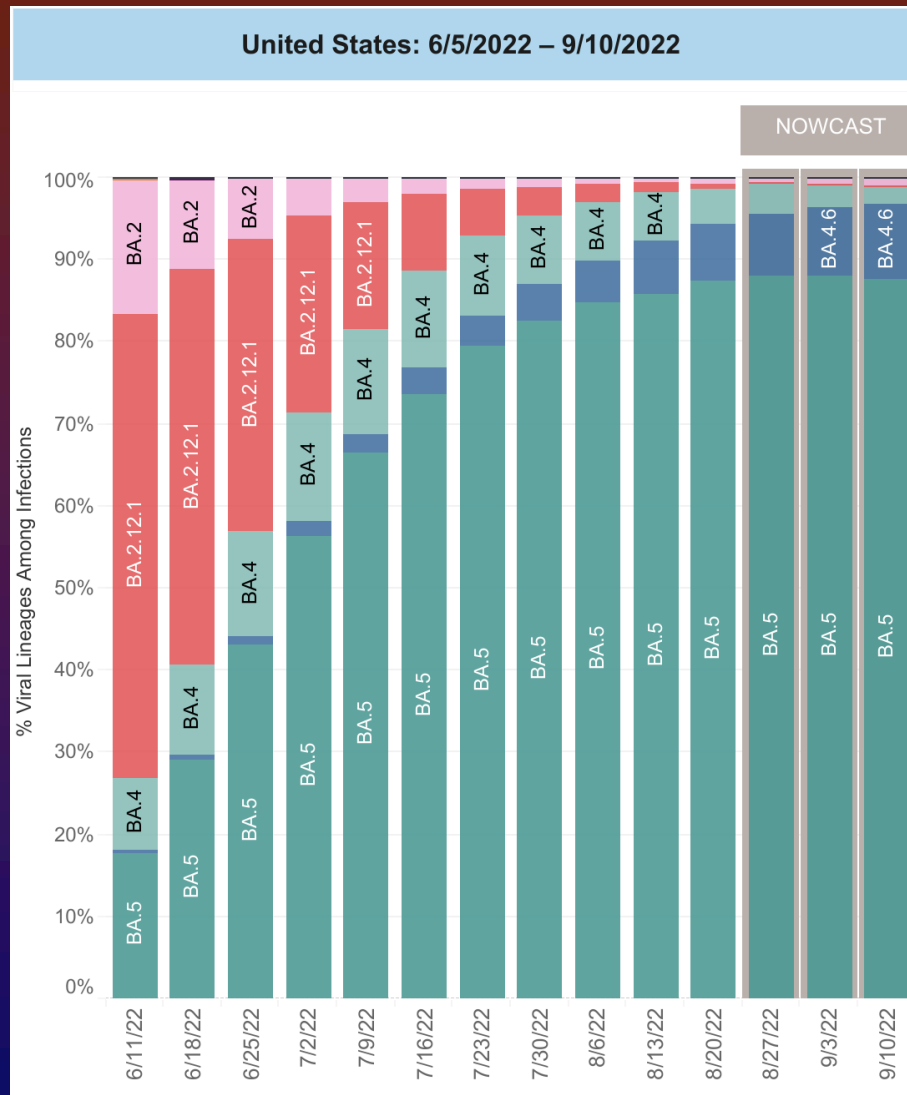
Jonathan Vilasier Iralu, MD, FACP, FIDSA

Indian Health Service Chief Clinical Consultant
for Infectious Diseases



Disclosures

Virology





Prevention

- ❖ Four available vaccine for primary series
 1. Moderna
 2. Pfizer BioNTech
 3. Novavax (protein subunit) age 12 and up
 4. Janssen (adenovirus vector) age 18 and up → **TTS** clot warning
- ❖ **Optional 8-week interval** between doses for #1, 2 and 3
 - ❖ Minimizes myopericarditis risk
 - ❖ Not for immunocompromised, age > 65, outbreak response



Prevention

- ❖ **New Booster Recommendation:**

- ❖ Moderna bivalent vaccine for all age 18 and up

- ❖ Pfizer bivalent vaccine for all age 12 and up

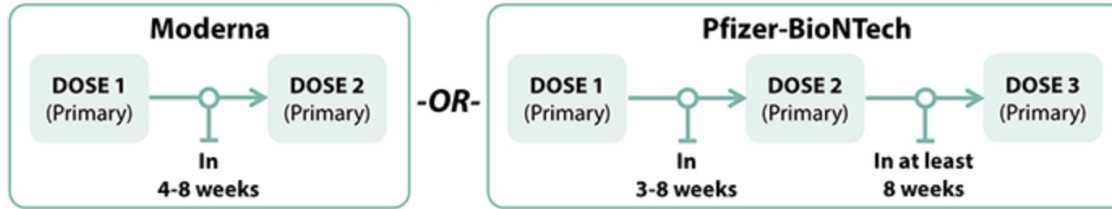
- ❖ **Recommend BIVALENT booster ≥ 2 months** after last vaccine for

- ❖ Anyone who completed the primary series

- ❖ Anyone who received a booster before

COVID-19 Vaccination Schedule for People who are NOT Moderately or Severely Immunocompromised

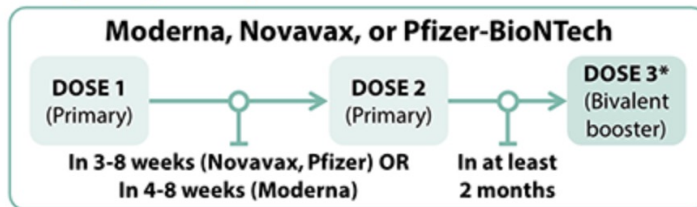
People ages 6 months through 4 years



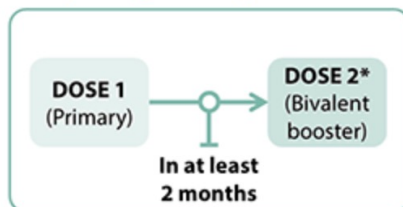
People ages 5 through 11 years



People ages 12 years and older



People ages 18 years and older who previously received Janssen primary series dose[†]



COVID-19 Vaccination Schedule for People who are Moderately or Severely Immunocompromised

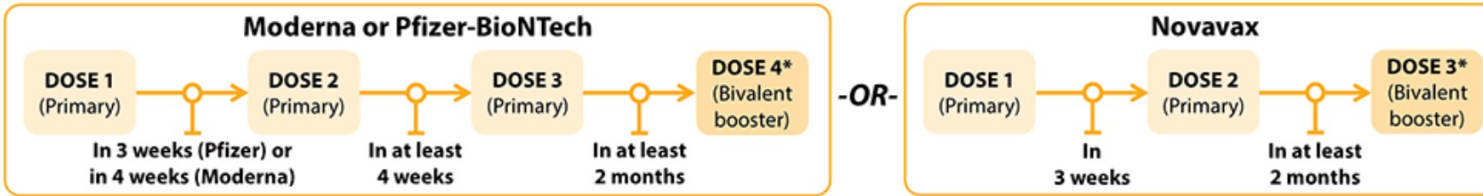
People ages 6 months through 4 years



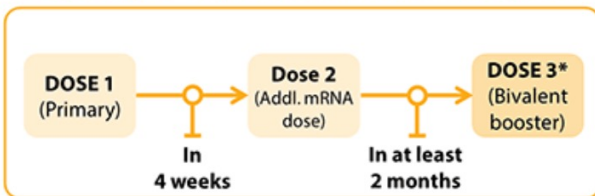
People ages 5 through 11 years



People ages 12 years and older

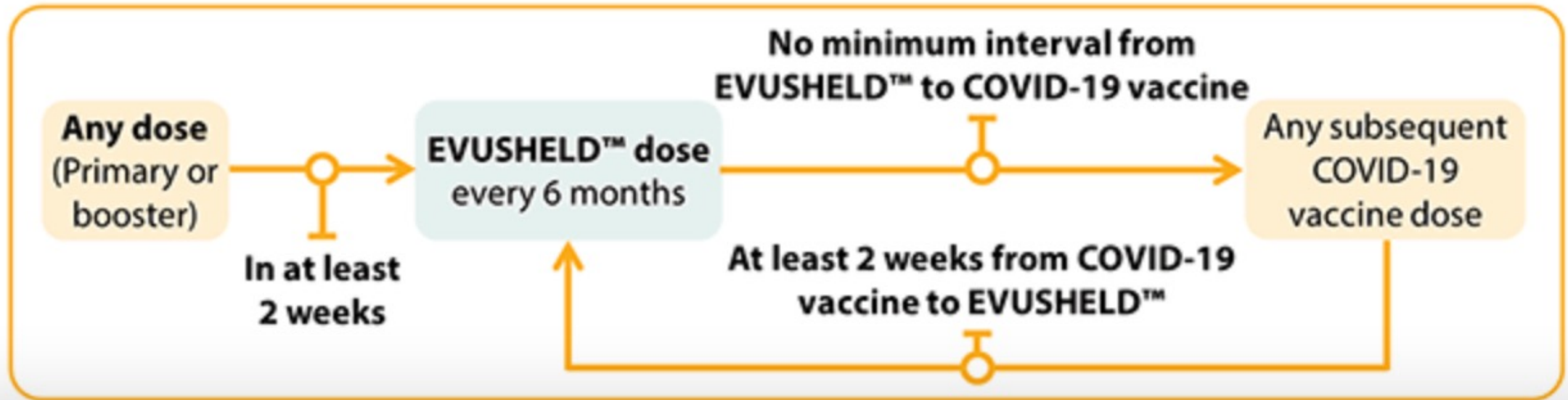


People ages 18 years and older who previously received Janssen primary series dose[†]



Monoclonal antibodies (EVUSHELD™) for COVID-19

People ages 12 years and older (must weigh at least 40kg)

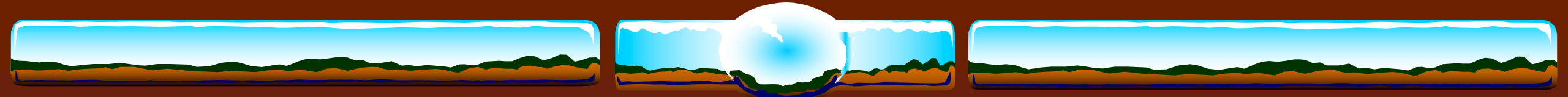


FDA approved for dosing every 6 months



NIH Treatment Guideline Update- August 18, 2022

- ❖ Immunocompromised patients who are hospitalized
 - ❖ Use the same antivirals and immunomodulatory drugs as for the non-compromised
 - ❖ Consider stopping or decreasing immunosuppressive meds with a specialist's help
 - ❖ Consider extending remdesivir past 5 days to 10 days
 - ❖ Avoid steroids if on minimal O2 and early on in disease (<10 days)
 - ❖ Add IL-6 and JAK inhibitors to dexamethasone, weighing risks with the specialist



Infection Prevention for the General Population

❖ Exposure

- ❖ No quarantine
- ❖ Wear a mask around others indoors and watch symptoms for 10 days
- ❖ Test yourself at day 6 and keep wearing mask if negative for 10 days

❖ Isolation

- ❖ If **mild**, stay home at least 5 days until no fever 24 hrs, improved symptoms
- ❖ If **moderate** (SOB), **severe** (hospitalized) or **immunocompromised**, isolate for 10 days (ask your doctor if hospitalized or immunocompromised)



Infection Prevention

for the Healthcare Professionals

- ❖ **Asymptomatic or mild:** isolate through day 5 and mask 10 days
- ❖ **Moderate or severe:** Isolate through day 10 (**day 20 for severe**)
- ❖ **Immunocompromised:** Isolate through day 20
 - ❖ Test serially and consult a specialist:
 - ❖ Need **two negative tests 24 hours apart** to end isolation
 - ❖ **Antigen test** or **Nucleic Acid Amplification Test** are OK
 - ❖ Still testing positive at day 30: consider genomic sequencing or viral culture

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/duration-isolation.html>



Monkeypox Prevention

❖ ACAM2000

- ❖ Vaccinia virus derived vaccine grown in Vero cell culture
- ❖ Approved in 2007 for prevention of **smallpox for orthopoxvirus lab workers**
- ❖ Available under **Expanded Access Investigational New Drug** protocol
- ❖ Causes a “take” at injection site
- ❖ Risk for progressive vaccinia, eczema vaccinatum, myopericarditis, etc
- ❖ **Not being offered in the IHS**

<https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/acam2000-vaccine.html>



Monkeypox Prevention

❖ JYNNEOS

- ❖ Replication deficient Modified Virus Ankara (MVA) vaccine
- ❖ FDA approved for age 18 and above for Smallpox and Monkeypox prevention in those deemed high risk for infection
- ❖ Does not cause a “take” or a PPD-like reaction
- ❖ No risk for inoculation/auto-inoculation or severe complications
- ❖ Efficacy **inferred** from human immunogenicity and **animal challenge studies**

<https://www.cdc.gov/mmwr/volumes/71/wr/mm7122e1.htm>



Monkeypox Prevention

❖ Who should get Jynneos right now per CDC?

❖ PEP ++

- ❖ Contact of a case identified by public health authorities through contact investigation (PEP)
- ❖ Self reported contact with a case of MPX within 14 days
- ❖ Certain gay, bisexual, or other men who have sex with men, or transgender and gender diverse people who have sex with men, who have had any of the following within the past 14 days:
 - ❖ sex with multiple partners (or group sex)
 - ❖ sex at a commercial sex venue;
 - ❖ sex in association with an event, venue, or *defined geographic area with MPX transmission*

❖ PrEP:

- ❖ preexposure vaccine for lab workers who do poxvirus molecular diagnostics



Monkeypox Prevention in the IHS 9/9/2022

- ❖ **Anyone** (any sexual orientation or gender identity) who has had **close physical contact** with someone who has monkeypox in the last 14 days.
- ❖ **Anyone** (any sexual orientation or gender identity) who:
 - ❖ Has had **multiple sexual partners** in the last 14 days
 - ❖ Has had **sexual partners they did not previously know** in the last 14 days
 - ❖ Has had close physical contact in a **venue where anonymous/group sex** may occur in the last 14 days
 - ❖ Was diagnosed with **gonorrhea or syphilis** in the past three months
 - ❖ Already **uses or is eligible for HIV PrEP**
 - ❖ Engages in **commercial and/or transactional sex**
- ❖ **Anyone** (any sexual orientation or gender identity) identified by public health as a **known high-risk contact** of someone who has monkeypox.



Monkeypox Prevention

- ❖ Who should not get JYNNEOS vaccine?
 - ❖ Anaphylaxis to JYNNEOS vaccine (contraindication)
- ❖ Which patients should you be careful with (PRECAUTION):
 - ❖ Anaphylaxis to gentamicin or ciprofloxacin (precaution)
 - ❖ Anaphylaxis to chicken/eggs and avoiding these foods (precaution)
 - ❖ Moderate illness with or without fever. (precaution-consider delay)
- ❖ Precaution:
 - ❖ Discuss risks and benefits, and observe 30 minutes **or** consult allergist first



Monkeypox Prevention

❖ How do you give it?

❖ Adults \geq 18 years old:

❖ **Subcutaneous vaccination:** 0.5 ml per dose is standard when quantities allow

❖ **Intradermal vaccination** (like a PPD TB skin test): 0.1 ml per dose. **← IHS Preferred**

❖ FDA EUA: discuss EUA and give the form to patient

❖ People $<$ 18: Subcutaneous vaccine only, with EUA

❖ History of Keloid scarring: Subcutaneous vaccine only

❖ **REPEAT** the dose in 4 weeks.

❖ **Immunity peaks** in 2 weeks after second dose





Monkeypox Prevention

- ❖ Can I co-administer JYNNEOS with other vaccines?
 - ❖ In general, yes!
 - ❖ OK with Pfizer, Moderna, Novavax vaccines
 - ❖ Consider delaying the COVID-19 vaccine for 4 weeks for adolescent or young adult males:
 - ❖ Risk of myopericarditis seen with ACAMM2000
 - ❖ Unknown risk with JYNNEOS
- ❖ OK during, illness, pregnancy, breast feeding, immunocompromised



Monkeypox Treatment

- ❖ **Who should be treated?**
- ❖ **Severe disease** (e.g., hemorrhagic/confluent rash, sepsis, encephalitis, or hospitalized)
- ❖ **At high risk of severe disease:**
 - ❖ **Immunocompromised:** HIV, Cancer, transplant, chemo, XRT, biologic Rx, steroids, GVHD, autoimmune disease with immunocompromise
 - ❖ **Pediatric populations**, especially younger than 8 years of age
 - ❖ **Atopic dermatitis or other active exfoliative skin conditions** (e.g., eczema, burns, impetigo, varicella zoster virus infection, herpes simplex virus infection, severe acne, severe diaper dermatitis with extensive areas of denuded skin, psoriasis, or Darier disease Pregnant or breastfeeding persons
 - ❖ **Complications** : superinfection, gastroenteritis with severe nausea/vomiting, diarrhea, or dehydration; bronchopneumonia;
 - ❖ **Aberrant placement** : with involvement of eyes, mouth, genitals or anus



Monkeypox Treatment

❖ What should you treat with?

- ❖ Tecoviramat (TPOXX) (approved for smallpox)
- ❖ Vaccinia Immune Globulin (approved for vaccinia vaccine complications)
- ❖ Cidofovir (approved for CMV retinitis)
- ❖ Brincidofovir (approved for smallpox)



Monkeypox Treatment

❖ Tecoviramat

- ❖ Inhibitor of the orthopoxvirus VP37 envelope wrapping protein
- ❖ Oral 200 mg capsules or IV formulation available (renally adjusted)
 - ❖ 600 mg every 12 hours for 14 days for 40-120KG (q8 hours if >120kg)
- ❖ Appears to shorten illness and prevent spread
- ❖ Adverse Reactions
 - ❖ Oral: headache, nausea, abdominal pain, and vomiting, neutropenia
 - ❖ IV: infusion site pain, swelling, erythema, extravasation, and headache
- ❖ Drug Interactions: repaglinide and midazolam



Monkeypox Treatment

- ❖ Consult designated SU pharmacist or provider
- ❖ **Fill out lots of forms!**
 - ❖ Informed Consent Form
 - ❖ Patient Intake Form (Form A)
 - ❖ FDA Form 1572
 - ❖ Serious Adverse Events

https://www.ihs.gov/sites/nptc/themes/responsive2017/display_objects/documents/monkeypox/NPTC%20ETU%20CDC%20Updates%20Guidance%20For%20Monkeypox%20Countermeasures%20FINAL%20Epdf

Don't Forget about
Syphilis!



DOUGLAS TESNER
THE ASSOCIATED PRESS

DISEASE FIGHTER: Dr. Jonathan Iralu, of the Gallup Indian Medical Center, holds a syringe of penicillin used to treat syphilis, a disease that is sharply increasing on the Navajo Reservation.

