



Mpox Vaccine Work Group

Pablo Sanchez MD

**The Ohio State University–Nationwide Children’s Hospital
Chair, ACIP Mpox Work Group**

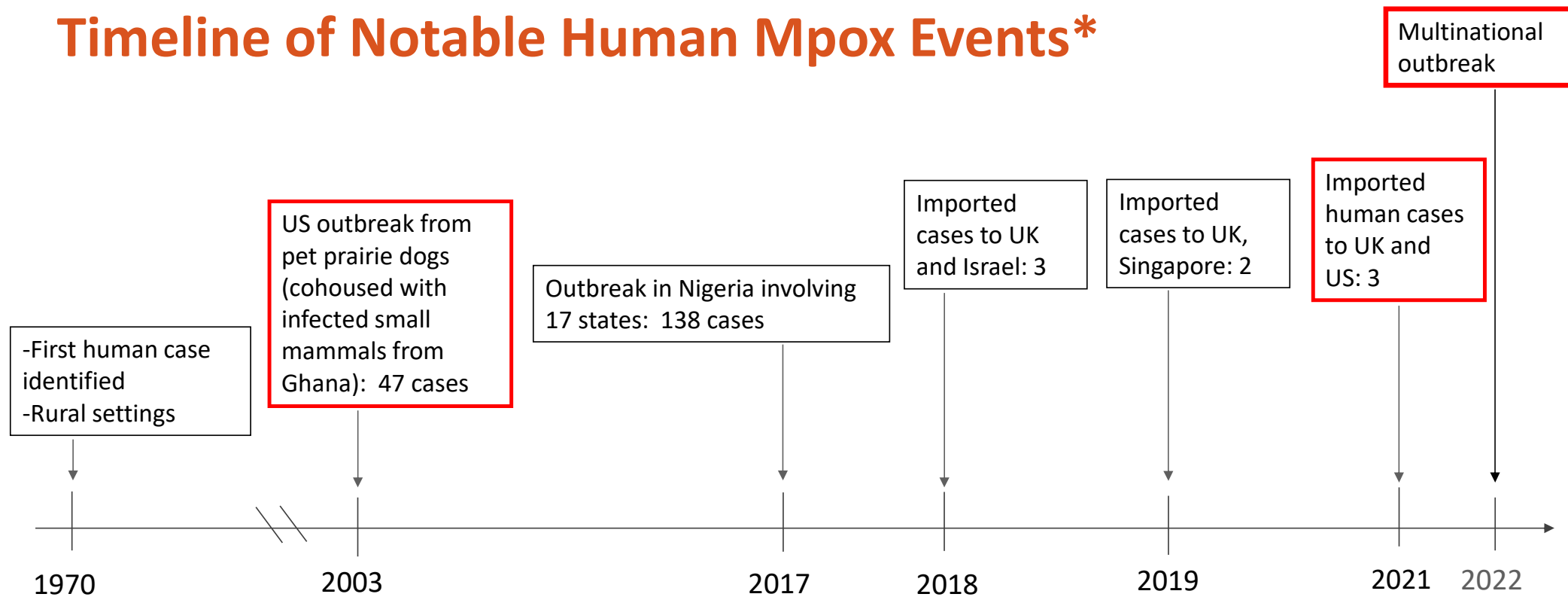
ACIP Meeting

February 22, 2023

Mpox – Historical Context

- Rare, sometimes life-threatening infection
- Endemic in parts of west and central Africa
- Caused by monkeypox virus (which is an orthopoxvirus)
 - Clade I (previously Congo Basin Clade)
 - Clade II (previously West African Clade)
- Can spread from infected animals to people and then person-to-person
 - Respiratory secretions
 - Skin-to-skin contact with infected bodily fluids (e.g., fluid from lesions)
 - Fomites (e.g., shared towels, clothing, and bedding)

Timeline of Notable Human Mpox Events*




*During 1970-2021, mpox was known to be endemic in 9 African countries: Cameroon, Central African Republic, Cote d'Ivoire, Democratic Republic of Congo, Gabon, Liberia, Nigeria, Republic of Congo, and Sierra Leone; during recent years, there has been a re-emergence of human cases after decades of no reported cases

Person-to-person spread

- Historical outbreaks in Africa
 - Associated with close skin-to-skin contact and contact with fomites
 - Zoonotic exposure cause of most cases
 - Few secondary cases among close contacts (e.g., household contacts)
- US outbreaks
 - 2003: No secondary cases → no vaccinations offered
 - 2021: No secondary cases → ACAM2000 offered to some contacts*
 - 2022: Many secondary cases → >1 million doses of JYNNEOS administered

*ACAM2000 was offered through a CDC Investigational New Drug Protocol that allows for vaccination after mpox exposure. Only contacts with high-risk exposures were offered vaccine; none accepted.



2021 ACIP Orthopoxvirus Vaccine Vote

- Use of orthopoxvirus vaccine, JYNNEOS, (licensed in 2019) for pre-exposure vaccination of people at occupational risk for orthopoxvirus exposures
- 2-dose series, subcutaneous administration
- Recommendations published June 3, 2022*

The screenshot shows the CDC website header with the logo and tagline 'Centers for Disease Control and Prevention CDC 24/7: Saving Lives. Protecting People™'. Below the header is a blue navigation bar for 'Morbidity and Mortality Weekly Report (MMWR)'. The main content area displays the title of the article, 'Use of JYNNEOS (Smallpox and Monkeypox Vaccine, Live, Nonreplicating) for Preexposure Vaccination of Persons at Risk for Occupational Exposure to Orthopoxviruses: Recommendations of the Advisory Committee on Immunization Practices — United States, 2022', along with the issue information 'Weekly / June 3, 2022 / 71(22);734-742'. A note states 'On May 27, 2022, this report was posted online as an MMWR Early Release.' and another note says 'Please note: This report has been corrected. An erratum has been published.' The authors listed are Agam K. Rao, MD¹; Brett W. Petersen, MD¹; Florence Whitehill, DVM^{1,2}; Jafar H. Razeq, PhD³; Stuart N. Isaacs, MD⁴; Michael J. Merchliinsky, PhD⁵; Doug Campos-Outcalt, MD⁶; Rebecca L. Morgan, PhD⁷; Inger Damon, MD, PhD¹; Pablo J. Sánchez, MD⁸; Beth P. Bell, MD⁹. A link for '(VIEW AUTHOR AFFILIATIONS)' is provided.

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

Currently no ACIP recommendation for use of JYNNEOS
during outbreaks



Current U.S. national mpox vaccination strategy*

Vaccination before exposure to mpox virus	Post-exposure prophylaxis
<p>-Gay, bisexual, and other MSM, transgender or nonbinary people (including adolescents who fall into the aforementioned categories) who in the past 6 months have had:</p> <ul style="list-style-type: none">• New diagnosis of ≥ 1 sexually transmitted disease• More than one sex partner <p>-People with the following in the last 6 months:</p> <ul style="list-style-type: none">• Sex at commercial sex venue• Sex in association with large public event in geographic area where mpox transmission is occurring <p>-Sexual partners of people with the above risks</p> <p>-People who anticipate experiencing above risks</p> <p>-People with HIV or other causes of immunosuppression who have had recent or anticipate potential mpox exposure</p>	<p>-People who are known contacts to someone with mpox and identified by public health authorities (for example, via case investigation, contact tracing, or risk exposure assessment)</p> <p>-People who are aware that a recent sex partner within the past 14 days was diagnosed with mpox</p> <p>-Gay, bisexual, or other MSM, and transgender or nonbinary people (including adolescents who fall into any of the aforementioned categories) who have had any of the following within the past 14 days: sex with multiple partners (or group sex); sex at commercial sex venue; or sex in association with an event, venue, or defined geographic area where mpox transmission is occurring</p>

*<https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/overview.html>

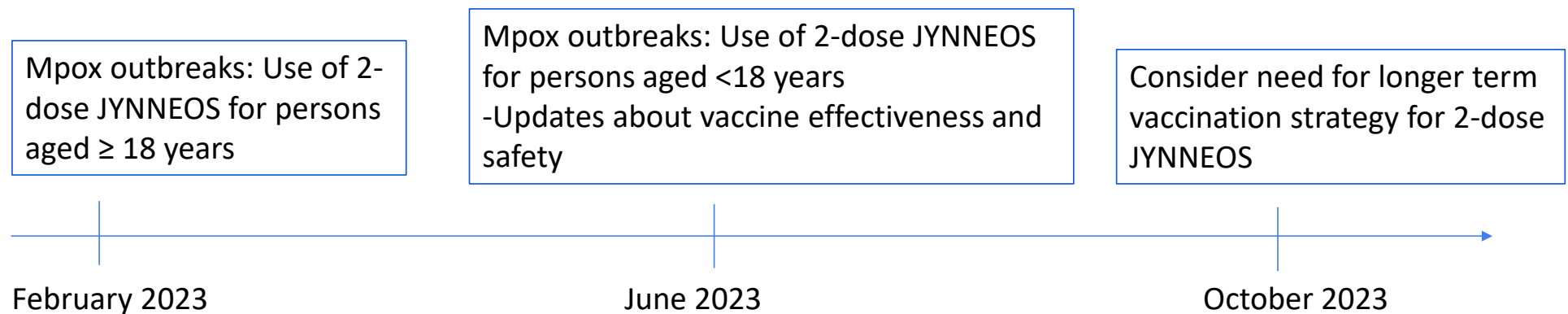
U.S. strategy for vaccination with JYNNEOS during current outbreak

- Intradermal preferred but subcutaneous can be administered for persons aged ≥ 18 years
- Subcutaneous for persons aged <18 years*
- 2-dose series with second dose administered 1 month after first dose

*<https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/overview.html>



Tentative timeline for ACIP discussions and votes*

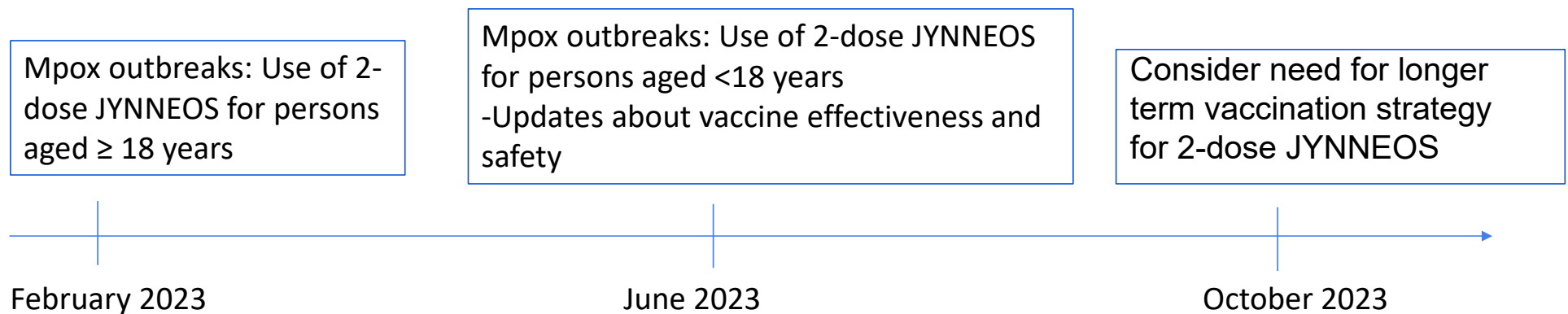


*February 2023 and June 2023 votes do not impact existing recommendations for the current mpox outbreak.

§ <https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/overview.html>

Tentative timeline for ACIP discussions and votes*

Current US mpox vaccination strategy remains active: Populations at high risk should continue to be vaccinated.



*February 2023 and June 2023 votes do not impact existing recommendations for the current mpox outbreak.

§ <https://www.cdc.gov/poxvirus/monkeypox/interim-considerations/overview.html>

Goal for today's meeting

- Updates from the ongoing outbreak
 - Epidemiology: Sascha Ellington
 - Vaccine effectiveness: Anna Chard
 - Vaccine safety: Jonathan Duffy
 - Community engagement: Kevin Delaney
 - Equity and implementation: Rosalind Carter
- Discuss use of 2-dose JYNNEOS (subcutaneous) during mpox outbreaks
 - Evidence to recommendations (EtR) framework: Agam Rao
 - ACIP vote

Proposed wording for today's vote

ACIP recommends the 2-dose* JYNNEOS vaccine series for persons aged 18 years and older at risk of mpox during an mpox outbreak[§]

*Dose 2 administered one month after dose 1

§ Public health authorities determine whether there is an mpox outbreak; a single case may be considered an mpox outbreak at the discretion of public health authorities. Other circumstances in which a public health response may be indicated include ongoing risk of introduction of mpox into a community due to disease activity in another geographic area.

WG members

ACIP Member

Pablo Sánchez

Beth Bell

Ex Officio and Liaison Members

CSTE: Chris Hahn / Paul Cieslak

ASTHO: Ericka McGowan

NACHO: Philip Huang

FDA: Sixun Yang, Clement

Meseda & Alonzo García

ACOG: Howard Minkoff

AAP: Jim Campbell

AIM: Rob Schechter / Jane Zucker

APHL: Jafar Razeq

NIH: Janet Lathey / Kimberly Taylor

IHS: Matthew Clark

NACI: Nicole Forbes / Oliver Baclic

IDSA: Shireesha Dhanireddy / Rajesh Gandhi

Invited Consultants

Subject matter experts: Inger Damon, Stuart Isaacs, Mike Merchlinsky & Amanda Zarrabian (HHS/BARDA)

Clinician experts in STIs, HIV, pediatrics, maternal vaccination, vaccine safety, health equity, smallpox vaccination strategies, occupational health

Clinician experts

STIs, HIV, and mpox (adult and peds):

Jason Zucker

Jeanne Marrasso

Pablo Tebas

Vince Marconi

Kim Workowski

Bonnie Maldonado

Immunizations (including for special populations) and vaccine safety:

Ruth Karron

Flor Munoz-Rivas

Kathy Edwards

Health equity, vaccination strategies including for smallpox:

Joel Breman

Gerard Vong

Occupational Medicine and worker safety:

Mark Russi

CDC contributors

Mpox epi, lab, and vaccine experts

Brett Petersen

Andrea McCollum

Christy Hutson

Laboratory Response Network:

Julie Villanueva

Infection control, worker safety:

Marie de Perio

David Kuhar

Special populations (e.g., Persons experiencing homelessness)

Emily Mosites

Vaccine safety

Michael McNeil

Jonathan Duffy

Regulatory Affairs

Yon Yu

STIs and HIV

Laura Bachmann

Leandro Mena

John Brooks

Alexa Oster

Drug Services

Julian Jolly

Vaccine implementation

Liz Velasquez

James Lee

DoD Liaison to CDC

Alan Lam

Work group lead

Agam Rao

Thank you!

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

