Global Health Cast 37
May 16, 2023

Every Week
12.00 noon - CET

Dr. Melvin Sanicas
@Vaccinologist

Prof. Dr. Joe Schmitt
@Prof_Schmitt
What we talk about today

- COVID-19 global health emergency is OVER
- COVID-19 epidemiology
- Obstructive sleep apnea and Long COVID
- MPOX is no longer a PHEIC
- Vaccines: License – Recommendation – Use
- “Most Infectious Diseases” - ZIKA
The end of the COVID-19 global health emergency is a moment for reflection. The painful lessons we have learned, the investments we have made, and the capacity we have built must be transformed into meaningful and lasting change.

https://twitter.com/WHO/status/1654499184764919809
Figure 1. COVID-19 cases reported by WHO Region, and global deaths by 28-day intervals, as of 7 May 2023**
Highest numbers of new 28-day cases
1. United States of America
2. Republic of Korea
3. Japan (this was Russia last week)
4. India (this was Japan last week)
5. France
Highest numbers of new 28-day deaths
1. United States of America
2. Brazil
3. Russian Federation
4. France
5. India (this was the Islamic Republic of Iran last week)
Table 2. Weekly prevalence of SARS-CoV-2 VOIs and VUMs, week 12 to week 16 of 2023

<table>
<thead>
<tr>
<th>Lineage</th>
<th>Countries</th>
<th>Sequences</th>
<th>2023-12</th>
<th>2023-13</th>
<th>2023-14</th>
<th>2023-15</th>
<th>2023-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>XBB.1.5* (VOI)</td>
<td>109</td>
<td>203 469</td>
<td>52.38</td>
<td>51.66</td>
<td>50.46</td>
<td>48.98</td>
<td>47.54</td>
</tr>
<tr>
<td>XBB.1.16* (VOI)</td>
<td>46</td>
<td>7153</td>
<td>4.01</td>
<td>4.98</td>
<td>6.64</td>
<td>7.73</td>
<td>8.58</td>
</tr>
<tr>
<td>BA.2.75*</td>
<td>121</td>
<td>109 754</td>
<td>3.70</td>
<td>3.39</td>
<td>3.46</td>
<td>3.15</td>
<td>1.51</td>
</tr>
<tr>
<td>CH.1.1*</td>
<td>91</td>
<td>44 419</td>
<td>4.88</td>
<td>4.92</td>
<td>3.89</td>
<td>3.92</td>
<td>3.57</td>
</tr>
<tr>
<td>BQ.1*</td>
<td>147</td>
<td>406 465</td>
<td>5.83</td>
<td>4.28</td>
<td>3.72</td>
<td>2.74</td>
<td>1.75</td>
</tr>
<tr>
<td>XBB*</td>
<td>124</td>
<td>61 726</td>
<td>4.92</td>
<td>5.59</td>
<td>5.94</td>
<td>7.14</td>
<td>8.20</td>
</tr>
<tr>
<td>XBB.1.9.1*</td>
<td>78</td>
<td>19 946</td>
<td>8.03</td>
<td>9.82</td>
<td>10.40</td>
<td>12.34</td>
<td>12.40</td>
</tr>
<tr>
<td>XBB.1.9.2*</td>
<td>53</td>
<td>4877</td>
<td>1.94</td>
<td>2.68</td>
<td>2.72</td>
<td>3.03</td>
<td>3.82</td>
</tr>
<tr>
<td>Unassigned</td>
<td>103</td>
<td>149 082</td>
<td>4.25</td>
<td>2.49</td>
<td>2.53</td>
<td>1.79</td>
<td>2.75</td>
</tr>
<tr>
<td>Other*</td>
<td>207</td>
<td>6 704 771</td>
<td>4.39</td>
<td>5.67</td>
<td>6.25</td>
<td>6.76</td>
<td>8.47</td>
</tr>
</tbody>
</table>

* Includes descendant lineages, except those individually specified elsewhere in the table. For example, XBB* does not include XBB.1.5, XBB.1.9.1, XBB.1.9.2 and XBB.1.16.

+ Others are other circulating lineages excluding the VOI, VUMs, BA.1*, BA.2*, BA.3*, BA.4*, BA.5*. 
Three ‘real world’ data research networks within the RECOVER initiative (PCORnet, PEDSnet, N3C) participated in this analysis.

Networks examined the risk of probable PASC in SARS-CoV-2 positive patients with and without pre-pandemic OSA diagnoses.

Definitions were harmonized across networks, with the exception of PASC, and adjusted for demographic and clinical factors.

OSA was associated with increased risk of PASC among adult patients after adjusting for other comorbidities and COVID severity.

After adjustment, associations among children were not significant.

The association diminished among all networks after adjustment, suggesting confounding from associations between obesity, or other comorbidities, and PASC.

Adults with pre-existing OSA had increased odds of developing PASC and may benefit from increased monitoring after SARS-CoV-2 infection.

The Emergency Committee on MPOX met for the fifth time and advised Dr Tedros that the multi-country outbreak is no longer a Public Health Emergency of International Concern (PHEIC).

11 May 2023 Statement

The Emergency Committee acknowledged the progress made in the global response to the multi-country outbreak of mpox and the further decline in the number of reported cases since the last meeting. The Committee noted a significant decline in the number of reported cases compared to the previous reporting period and no changes in the severity and clinical manifestation of the disease.

The Committee acknowledged remaining uncertainties about the disease, regarding modes of transmission in some countries, poor quality of some reported data, and continued lack of effective countermeasures in the African countries, where mpox occurs regularly. The Committee considered, however, that these are long-term challenges that would be better addressed through sustained efforts in a transition towards a long-term strategy to manage the public health risks posed by mpox, rather than the emergency measures inherent to a public health emergency of international concern (PHEIC).
NITAG

Pharmacist

Licensing authority

Factory

Vaccinees

Vaccinator

Manufacturer
How to Protect by Vaccination

Medical Need

Data Required
- Pre-Clinical research
- Clinical studies: Efficacy, safety, reactogenicity; GMP

Recommendation
- Benefits & Risks of Vaccination: Comprehensive National Plan

Payment
- Health economics

Best Practice
- Science data as above

Patient Preference
- All above; cultural & individual believes, values

Real Vaccine Use
- All of the above

Population Based / Individual Protection
Double-blind-randomized trials: Limitations due to bias and lack of relevance

Significant results may be useless

<table>
<thead>
<tr>
<th>Study year, drug group</th>
<th>Dosage</th>
<th>No. of participants who became ill/total in group (%)</th>
<th>Percent protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSS 1977</td>
<td>60 mL qid for 3 w (4.2 g/d)</td>
<td>14/62 (23)</td>
<td>62</td>
</tr>
<tr>
<td>Placebo 1977</td>
<td>60 mL qid for 3 w</td>
<td>40/66 (61, P &lt; .0001)</td>
<td></td>
</tr>
<tr>
<td>BSS 1985</td>
<td>2 tablets qid for 3 w (2.1 g/d)</td>
<td>7/51 (14, P &lt; .001)</td>
<td>65</td>
</tr>
<tr>
<td>BSS 1985</td>
<td>1 tablet qid for 3 w (1.05 g/d)</td>
<td>15/63 (24, NS)</td>
<td>40</td>
</tr>
<tr>
<td>Placebo 1985</td>
<td>2 tablets qid for 3 w</td>
<td>23/58 (40)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE. Percent protection = (percentage of placebo group that became ill) – (percentage of active drug group that became ill) ÷ (percentage of placebo group that became ill). NS = not significant.

It is a general belief that efficacy trials with the most reliable data are those in which a double-blind format has been followed. However, in two double-blind trials with very similar protocols the efficacy of the same lot of a whole cell DTP vaccine varied by 12%.
How to Protect by Vaccination

**Medical Need**

**License**
- Pre-Clinical research
- Clinical studies: Efficacy, safety, reactogenicity

**Recommendation**
- SCIENCE
  - Science data as above
- ACCEPTANCE
  - All above; cultural & individual believes, values
- FINANCING
  - Health economics
- CO-OPERATION
  - All of the above

**Population Based / Individual Protection**

**Payment**
- Health economics

**Best Practice**
- Science data as above

**Patient Preference**
- All above; cultural & individual believes, values

**Real Vaccine Use**
- All of the above
The most infectious diseases the WHO has identified to date:

- Nipah virus Check out GHC 33
- Crimean-Congo hemorrhagic fever Check out GHC 34
- Lassa fever Check out GHC 35
- Rift Valley fever Check out GHC 36
  - Zika
  - Ebola and Marburg
  - Middle East respiratory syndrome (MERS)
  - Severe acute respiratory syndrome (SARS)

Disease X (any unknown pathogen that could cause a future outbreak)
The most infectious diseases the WHO has identified to date:

- Nipah
- Crimean-Congo hemorrhagic fever
- Lassa
- Rift Valley fever
- Zika
- Ebola
- Middle East respiratory syndrome (MERS)
- Severe acute respiratory syndrome (SARS)

Disease X (any unknown pathogen that could cause a future outbreak)
Many people infected with Zika virus will not have symptoms or will only have mild symptoms.

The most common symptoms are:
- Fever
- Rash
- Headache
- Joint pain
- Conjunctivitis (red eyes)
- Muscle pain

Zika is usually mild with symptoms lasting for several days to a week. People usually don’t get sick enough to go to the hospital. For this reason, many people might not realize they have been infected.
Range of Microcephaly Severity

Baby with Typical Head Size

Baby with Microcephaly

Baby with Severe Microcephaly
What we talked about today

- COVID-19 global health emergency is OVER
- COVID-19 epidemiology
- Obstructive sleep apnea and Long COVID
- MPOX is no longer a PHEIC
- Vaccines: License – Recommendation – Use
- “Most Infectious Diseases” - ZIKA
COVID-19 looks different country-to-country

From the beginning, the COVID-19 pandemic has looked dramatically different based on where you’re living, the tools available to you, and the information being made publicly available.