Implementation of nOPV2 for cVDPV2 Outbreak Response

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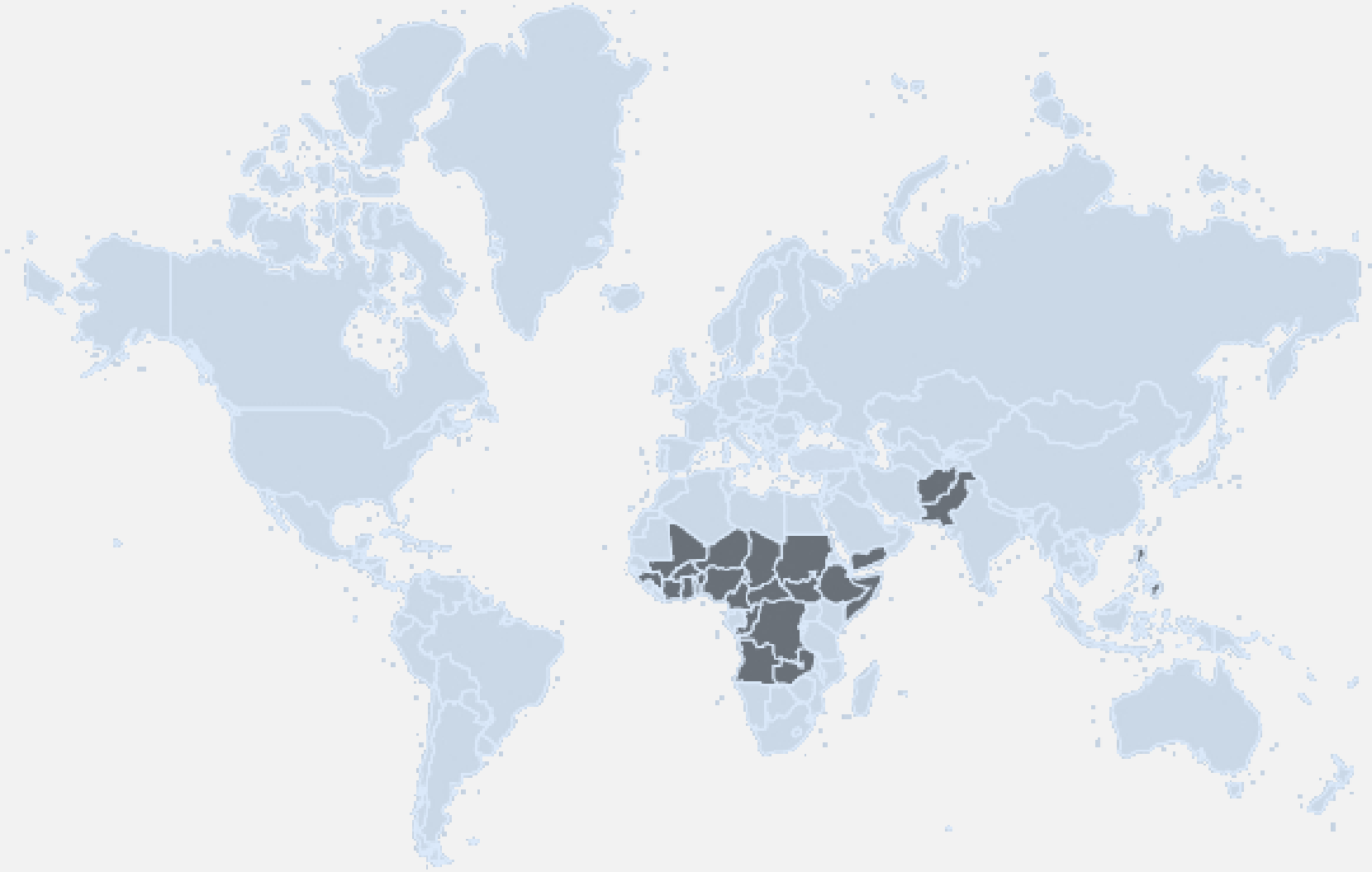
nOPV2: An Innovative Tool for cVDPV2 Outbreak Response

The Need for nOPV2: Circulating Vaccine-Derived Poliovirus (cVDPV)



Global Spread of cVDPV2 cases, 1 Jan – 25 November 2020

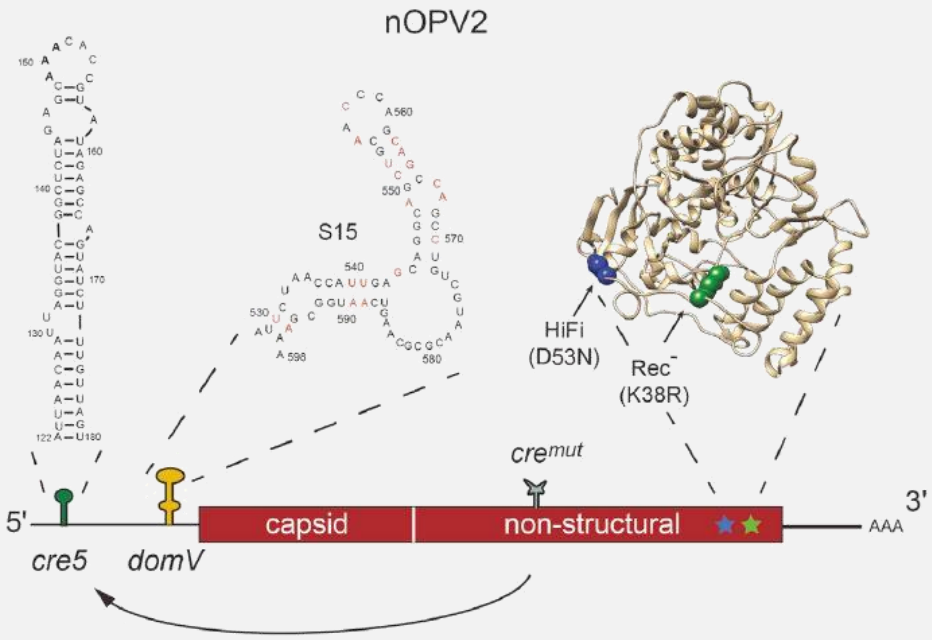
Circulating vaccine-derived polioviruses (cVDPVs) occur when the weakened strain of the poliovirus contained in the oral polio vaccine (OPV) circulates among children in under-immunized communities for a long time, and genetically reverts to a form that causes paralysis

The frequency and scope of cVDPV outbreaks, particularly cVDPV type 2 (cVDPV2), have increased in recent years.

The need for nOPV2: A New Tool for cVDPV2 Outbreak Response

- **The novel oral polio vaccine type 2 (nOPV2)** is a next-generation version of the existing cVDPV2 outbreak response vaccine, mOPV2
- nOPV2 has been in development for nearly 10 years
- Clinical trials have shown that nOPV2 provides comparable protection against type 2 poliovirus while being more genetically stable and therefore less likely to revert to a form that can cause paralysis in under-immunized communities. **This means that nOPV2 could help stop the spread of cVDPV2 outbreaks**.

nOPV2 Genome with modifications



Relevant publication on the nOPV2 Modifications and Source of this photo: Ming TY, Bujaki E, Dolan PT, Smith M, Wahid R, Konz J et al. Engineering the Live-Attenuated Polio Vaccine to Prevent Reversion to Virulence. Cell Host and Microbe 2020; 27(5):736-751.E8

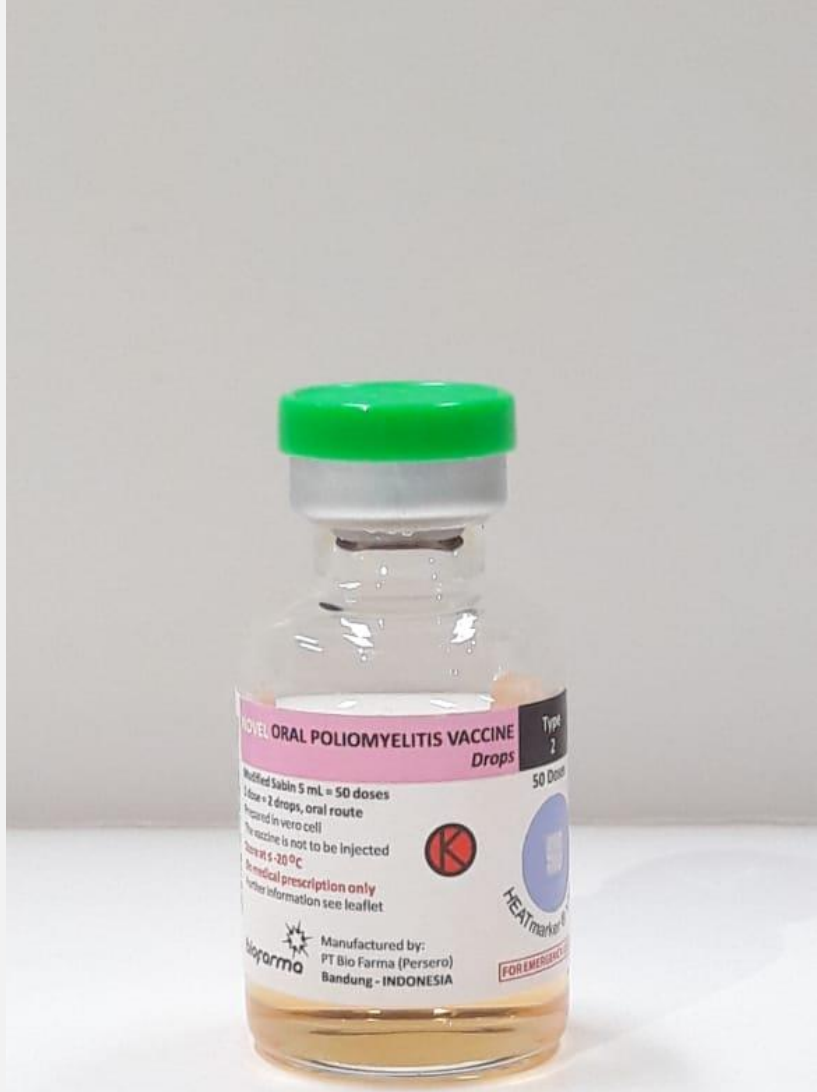
Details on the Vaccine and its Indicated Use

Indicated Use: Under the Emergency Use Listing, nOPV2 is authorized for cVDPV2 outbreak response only (like mOPV2). Guidance for deployment will be provided through updated GPEI Standard Operating Procedures

Presentation: 50-dose vials; liquid will be similar in colour to mOPV2. Like mOPV2, nOPV2 vials will feature a vaccine vial monitor (VVM)

Administration and Dosage: two drops, delivered orally

Target Population: Will usually be children under 5 (as with current outbreak response campaigns); however, an expanded age group may be considered if there is evidence of virus circulation among older age groups



Policy Guidance and Statements In Support of nOPV2

WHO Executive Board	**In February 2020,** the WHO Executive Board issued a formal decision urging Member States to expedite processes for authorizing the importation and use of nOPV2 on the basis of its Emergency Use Listing (EUL). (See: WHO Executive Board Agenda Item 146.11, 7 February 2020)
WHO Strategic Advisory Group of Experts on Immunization (SAGE)	**At their October 2019 meeting,** the WHO SAGE endorsed the accelerated clinical development of nOPV2 and its assessment under the EUL procedure. (See: WHO Weekly Epidemiological Record 9447)
	At their April 2020 meeting, the WHO SAGE endorsed the framework for the initial use of nOPV2 under the Emergency Use Listing. (See: WHO Weekly Epidemiological Record 9522)
	At their October 2020 meeting, the WHO SAGE endorsed that nOPV2 should become the vaccine of choice for cVDPV2 outbreak response following a successful initial use period. (See: WHO Weekly Epidemiological Record 9548)
26th Polio IHR Emergency Committee	**In October 2020, the IHR Emergency Committee** urged countries to consider preparing for nOPV2 use under EUL to help stop the spread of cVDPV2 (See: IHR Committee Statement, October 2020)
WHO Member States	**At the resumed 73rd World Health Assembly (WHA) in November 2020**, Member States throughout the African Region, as well as Argentina, Luxembourg, Malaysia, and Pakistan, expressed their commitment to responding rapidly to poliovirus outbreaks and welcomed nOPV2 as an important tool

Plans for nOPV2 Rollout

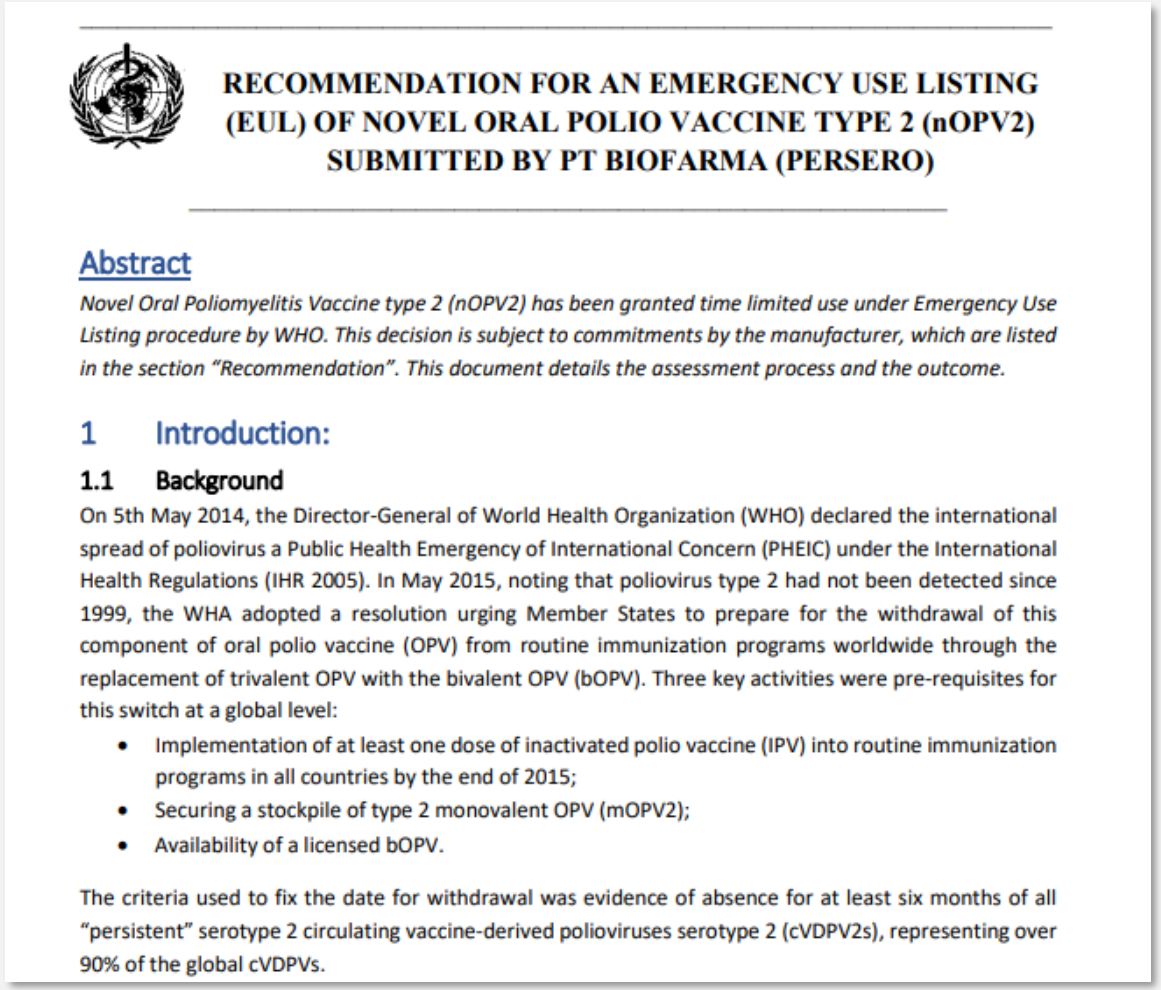
Global Rollout: Making nOPV2 Available through the WHO Emergency Use Listing (EUL)

WHAT IS THE EUL?

The EUL (Emergency Use Listing) is a **special rigorous and independent regulatory pathway that is available for use in Public Health Emergencies of International Concern (PHEIC) such as polio**. It ensures that vaccines and other medical products can be made available as soon as possible in emergency public health situations like cVDPV2 outbreaks.

WHY IS nOPV2 BEING MADE AVAILABLE THROUGH AN EUL?

- A streamlined regulatory process supported by WHO and rapid field availability to help stop the spread of cVDPV2 and prevent paralysis in children
- Confidence in nOPV2's safety and effectiveness based on clinical development and trial data
- Similarities to mOPV2, a vaccine with which the GPEI has decades of experience



RECOMMENDATION FOR AN EMERGENCY USE LISTING (EUL) OF NOVEL ORAL POLIO VACCINE TYPE 2 (nOPV2) SUBMITTED BY PT BIOFARMA (PERSERO)

Abstract

Novel Oral Poliomyelitis Vaccine type 2 (nOPV2) has been granted time limited use under Emergency Use Listing procedure by WHO. This decision is subject to commitments by the manufacturer, which are listed in the section "Recommendation". This document details the assessment process and the outcome.

1 Introduction:

1.1 Background

On 5th May 2014, the Director-General of World Health Organization (WHO) declared the international spread of poliovirus a Public Health Emergency of International Concern (PHEIC) under the International Health Regulations (IHR 2005). In May 2015, noting that poliovirus type 2 had not been detected since 1999, the WHA adopted a resolution urging Member States to prepare for the withdrawal of this component of oral polio vaccine (OPV) from routine immunization programs worldwide through the replacement of trivalent OPV with the bivalent OPV (bOPV). Three key activities were pre-requisites for this switch at a global level:

- Implementation of at least one dose of inactivated polio vaccine (IPV) into routine immunization programs in all countries by the end of 2015;
- Securing a stockpile of type 2 monovalent OPV (mOPV2);
- Availability of a licensed bOPV.

The criteria used to fix the date for withdrawal was evidence of absence for at least six months of all "persistent" serotype 2 circulating vaccine-derived polioviruses serotype 2 (cVDPV2s), representing over 90% of the global cVDPVs.

The official WHO PQ assessment of nOPV2 (pictured here) is available at:
https://extranet.who.int/pqweb/sites/default/files/documents/nOPV2_EUL_recommendation.pdf

The First Uses of nOPV2: The Initial Use Period

What is the Initial Use Period?	The initial use period refers to **the period of time spanning the first uses of nOPV2 in outbreak response, when additional criteria for monitoring the vaccine's safety and effectiveness are in place.**
Why is an Initial Use Period Needed?	Given that cVDPV2 outbreaks disproportionately affect areas where access to healthcare is difficult, enhanced monitoring is essential to detect any unanticipated events and respond to them quickly and effectively.
When will the Initial Use Period begin?	Now that the WHO PQ team has issued the EUL recommendation for the use of nOPV2, the initial use period can begin as soon as the first country is ready to use nOPV2. The current estimate for the beginning of the Initial Use Period is January 2021.
For how long will the Initial Use Period last?	The initial use period is expected to last until sufficient data can be collected and analyzed to confirm the vaccine's performance and safety. The duration of the initial use period depends on the number of doses administered but is expected to last for at least 14-15 weeks after first use. This why **any country interested in using nOPV2 within the next 3-6 months should begin preparing for nOPV2 use now—and should anticipate needing to meet the initial use criteria.**

The Initial Use Criteria for nOPV2

Endorsed by the Strategic Advisory Group of Experts on Immunization (SAGE)

- VDPV2 detection
- Capacity to acquire/distribute vaccine in a timely manner
- Capacity to respond to unanticipated findings
- Capacity for post-deployment surveillance (including safety, AFP and ES)
- Waiting period of 12 weeks after last mOPV2 use in area

Additional Considerations for nOPV2 Use in Outbreak Response

- A waiting period of 6 weeks after bOPV outbreak response campaigns (to minimize risk of recombination between nOPV2 and mOPV1/3)
- Vaccine acceptance
- Access or security issues

Specifics on Initial Use

- First uses under EUL: outbreak response with nOPV2 alone
- Ensure sufficient vaccine to conduct full required number of rounds with nOPV2

Full Timeline and Process for nOPV2 Rollout

	Initial Use Period following the EUL Recommendation for Use	Continued use of nOPV2 under the EUL Recommendation for Use	nOPV2 receives WHO Prequalification (End of EUL Recommendation and Listing Period)
Timing	The first outbreak responses with nOPV2 under an EUL recommendation for use	Following the conclusion of the Initial Use Period and review of the data generated, SAGE will be asked to endorse wider use of nOPV2 under the EUL recommendation through 2022	To be determined, but not before 2023. Some necessary activities (e.g. studies) have been delayed due to COVID-19
Applicable Criteria	• Essential Criteria for Initial Use • Safety and surveillance monitoring requirements following vaccine deployment (sometimes called post-deployment monitoring, or PDM requirements), which are required for use of the vaccine under EUL (note that these may evolve over time, based on data and learnings)	Safety and surveillance monitoring requirements following vaccine deployment (sometimes called post-deployment monitoring, or PDM requirements), which are required for use of the vaccine under EUL (note that these may evolve over time, based on data and learnings)	Standard conditions for vaccine use, informed by lessons learned from the implementation of nOPV2 under the EUL recommendation for use

Process for Country Readiness and Implementation

Which countries are preparing for nOPV2 use?

All countries identified as being at high risk of VDPV2 detection should begin preparing for nOPV2 use now, in order to be able to conduct a response with nOPV2 while it is under the EUL

High-risk countries have been identified within each region and WHO/UNICEF Regional Offices are currently working with these countries to prepare for nOPV2 use

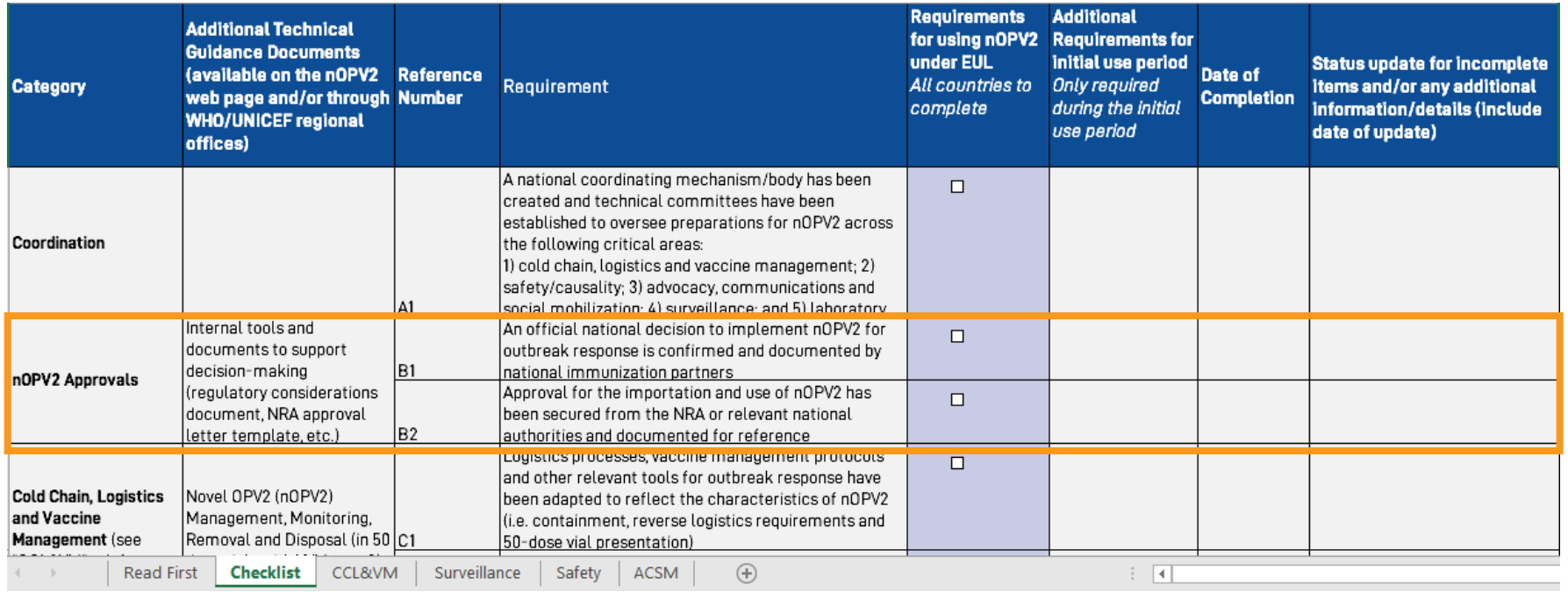
Which countries are classified as high risk?

- Countries with current VDPV2 detections in AFP or ES surveillance
- Countries that have had a cVDPV2 detection in the past 6-12 months
- Countries that border countries that meet the above criteria
- Other countries in regions where cVDPV2 has been detected that do not meet these criteria but would like to be prepared for a possible VDPV2 detection and subsequent response with nOPV2 may also wish to start preparations

How are countries preparing for nOPV2 use?

The GPEI has created a readiness process and readiness tools in order to help countries meet all criteria and prepare for nOPV2 implementation under the EUL.

- Each country will need to complete the requirements described in the GPEI nOPV2 readiness checklist
- Countries will be supported in their readiness preparations by national nOPV2 focal points, regional nOPV2 focal points, WHO/UNICEF Regional Offices, and other regional- and global-level subject matter experts
- **A documented recommendation from the NITAG/national immunization advisory group and the national regulatory authority is required for nOPV2 use in country**



Category	Additional Technical Guidance Documents (available on the nOPV2 web page and/or through WHO/UNICEF regional offices)	Reference Number	Requirement	Requirements for using nOPV2 under EUL *All countries to complete*	Additional Requirements for initial use period *Only required during the initial use period*	Date of Completion	Status update for incomplete items and/or any additional information/details (include date of update)
Coordination		A1	A national coordinating mechanism/body has been created and technical committees have been established to oversee preparations for nOPV2 across the following critical areas: 1) cold chain, logistics and vaccine management; 2) safety/causality; 3) advocacy, communications and social mobilization; 4) surveillance; and 5) laboratory	☐			
nOPV2 Approvals	Internal tools and documents to support decision-making (regulatory considerations document, NRA approval letter template, etc.)	B1	An official national decision to implement nOPV2 for outbreak response is confirmed and documented by national immunization partners	☐			
		B2	Approval for the importation and use of nOPV2 has been secured from the NRA or relevant national authorities and documented for reference	☐			
Cold Chain, Logistics and Vaccine Management (see	Novel OPV2 (nOPV2) Management, Monitoring, Removal and Disposal (in 50	C1	Logistics processes, vaccine management protocols and other relevant tools for outbreak response have been adapted to reflect the characteristics of nOPV2 (i.e. containment, reverse logistics requirements and 50-dose vial presentation)	☐			

Read First | Checklist | CCL&VM | Surveillance | Safety | ACSM

The Readiness Checklist and other tools can be found on the nOPV2 web page. The Technical Guidance Document which outlines the requirements is also located here: http://polioeradication.org/nOPV2

How are countries preparing for nOPV2 use? (continued)

Communications Preparation

The items in Category G of the Readiness Checklist (Advocacy, Communications and Social Mobilization):

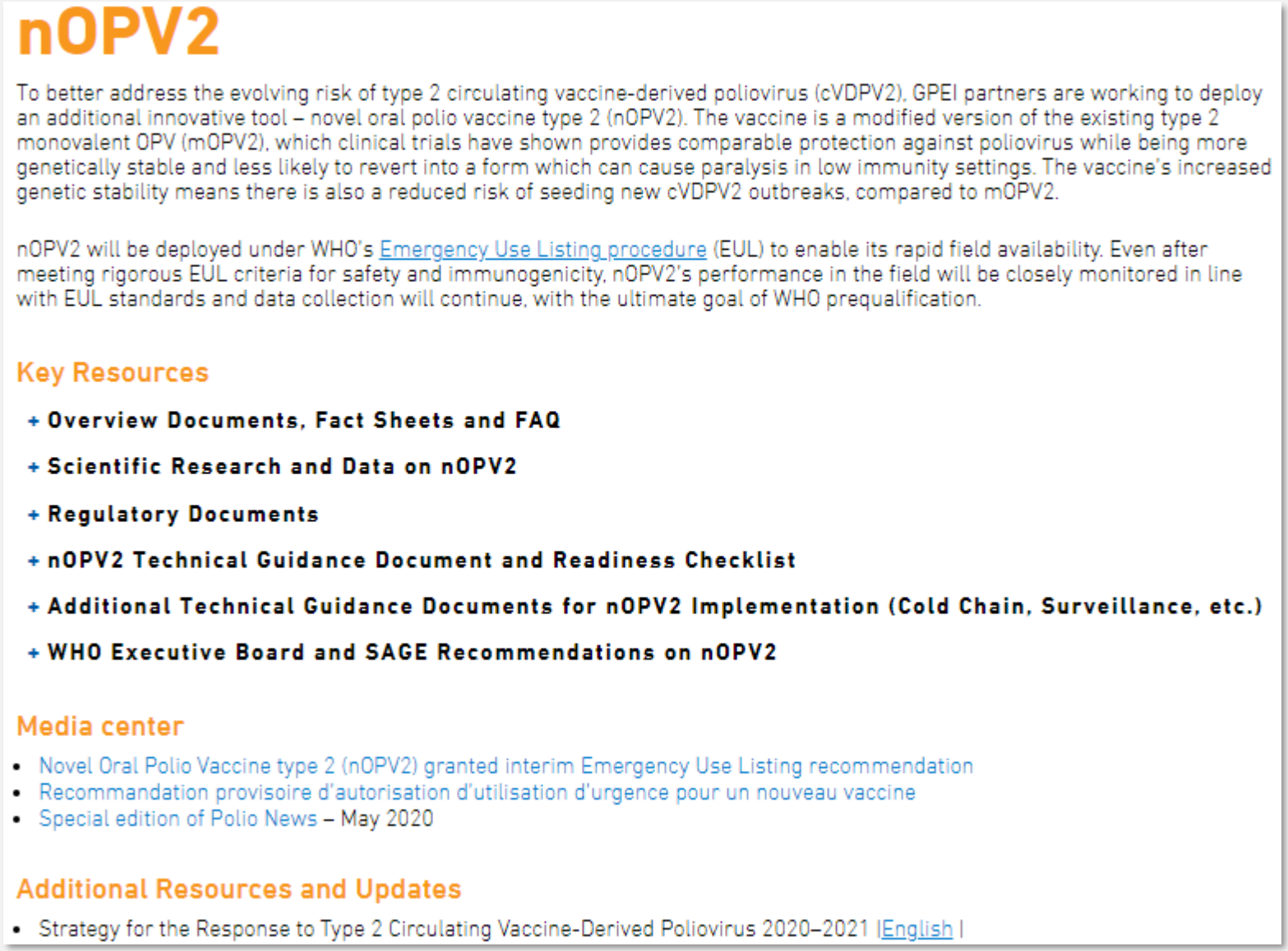
Communications messaging, tools and training will be crucial for increasing awareness and acceptance of nOPV2. The GPEI is working with countries to develop and implement communications strategies to harness the role of in-country immunization champions and mitigate against potential misinformation and rumours.

Category	Additional Technical Guidance Documents (available on the nOPV2 web page and/or through WHO/UNICEF regional offices)	Reference Number	Requirement	Requirements for using nOPV2 under EUL *All countries to complete*
Advocacy, Communications and Social Mobilization (see "ACSM" tab for further activities to consider)	Strategic Communications Guidance for cVDPV Outbreak Response including nOPV2 Introduction of nOPV2 for Polio Outbreak Response: A Training Manual for Supervisors Novel oral polio vaccine type 2 (nOPV2) Vaccine-Related Event (VRE) Response Plan Additional internal GPEI planning tools and templates	G1	Advocacy strategy for key in-country stakeholders (e.g. medical practitioners, religious and community leaders) has been finalized	☐
		G2	The C4D action plan has been developed. Key components: nOPV2 communications and messaging have been adapted to the local context; key actors including front-line workers have been trained; all stakeholders have been mapped and sensitized; concrete plans for digital platforms have been developed; all necessary messaging, tools and products have been developed	☐
		G3	A crisis communications plan has been developed and the plan addresses the needs identified in the nOPV2 VRE response plan for AEFI and possible public controversy (including tailored content to respond to misinformation on social media)	☐

Key Resources on nOPV2

An up-to-date list of relevant nOPV2 materials is maintained on the **nOPV2 web page of the GPEI website,** http://polioeradication.org/nOPV2.

New documents and tools for nOPV2 implementation continue to be developed and will be posted to the web page as they become available.



nOPV2

To better address the evolving risk of type 2 circulating vaccine-derived poliovirus (cVDPV2), GPEI partners are working to deploy an additional innovative tool – novel oral polio vaccine type 2 (nOPV2). The vaccine is a modified version of the existing type 2 monovalent OPV (mOPV2), which clinical trials have shown provides comparable protection against poliovirus while being more genetically stable and less likely to revert into a form which can cause paralysis in low immunity settings. The vaccine's increased genetic stability means there is also a reduced risk of seeding new cVDPV2 outbreaks, compared to mOPV2.

nOPV2 will be deployed under WHO's Emergency Use Listing procedure (EUL) to enable its rapid field availability. Even after meeting rigorous EUL criteria for safety and immunogenicity, nOPV2's performance in the field will be closely monitored in line with EUL standards and data collection will continue, with the ultimate goal of WHO prequalification.

Key Resources

+ **Overview Documents, Fact Sheets and FAQ**
+ **Scientific Research and Data on nOPV2**
+ **Regulatory Documents**
+ **nOPV2 Technical Guidance Document and Readiness Checklist**
+ **Additional Technical Guidance Documents for nOPV2 Implementation (Cold Chain, Surveillance, etc.)**
+ **WHO Executive Board and SAGE Recommendations on nOPV2**

Media center

- Novel Oral Polio Vaccine type 2 (nOPV2) granted interim Emergency Use Listing recommendation
- Recommandation provisoire d'autorisation d'utilisation d'urgence pour un nouveau vaccine
- Special edition of Polio News – May 2020

Additional Resources and Updates

- Strategy for the Response to Type 2 Circulating Vaccine-Derived Poliovirus 2020–2021 |English |

MERCI

THANK YOU

POLIO GLOBAL ERADICATION INITIATIVE

World Health Organization