



UK Health
Security
Agency

Overview of the polio response programme

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Overview

- Data
- System Response
- Response with and for the Jewish Community
- What next?

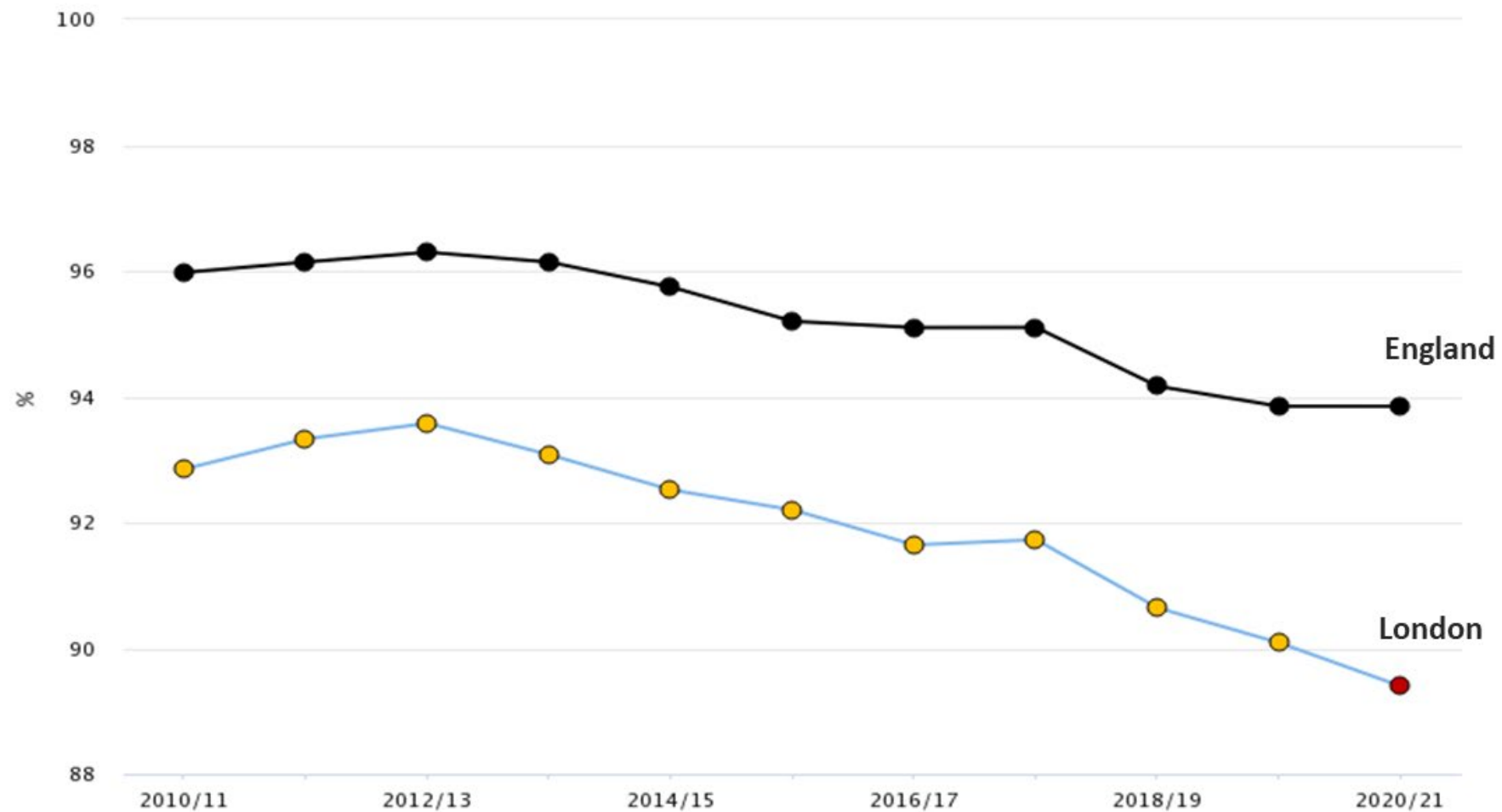


Why we're talking about this now

- Genetically related **vaccine derived poliovirus has been detected** in sewage samples in London with suggestions of viral transmission
- Background of **low immunisation uptake**
- There is a great deal of **learning from COVID-19**



Population vaccination coverage: DTaP/IPV/Hib course for London Region (coverage at age 2)



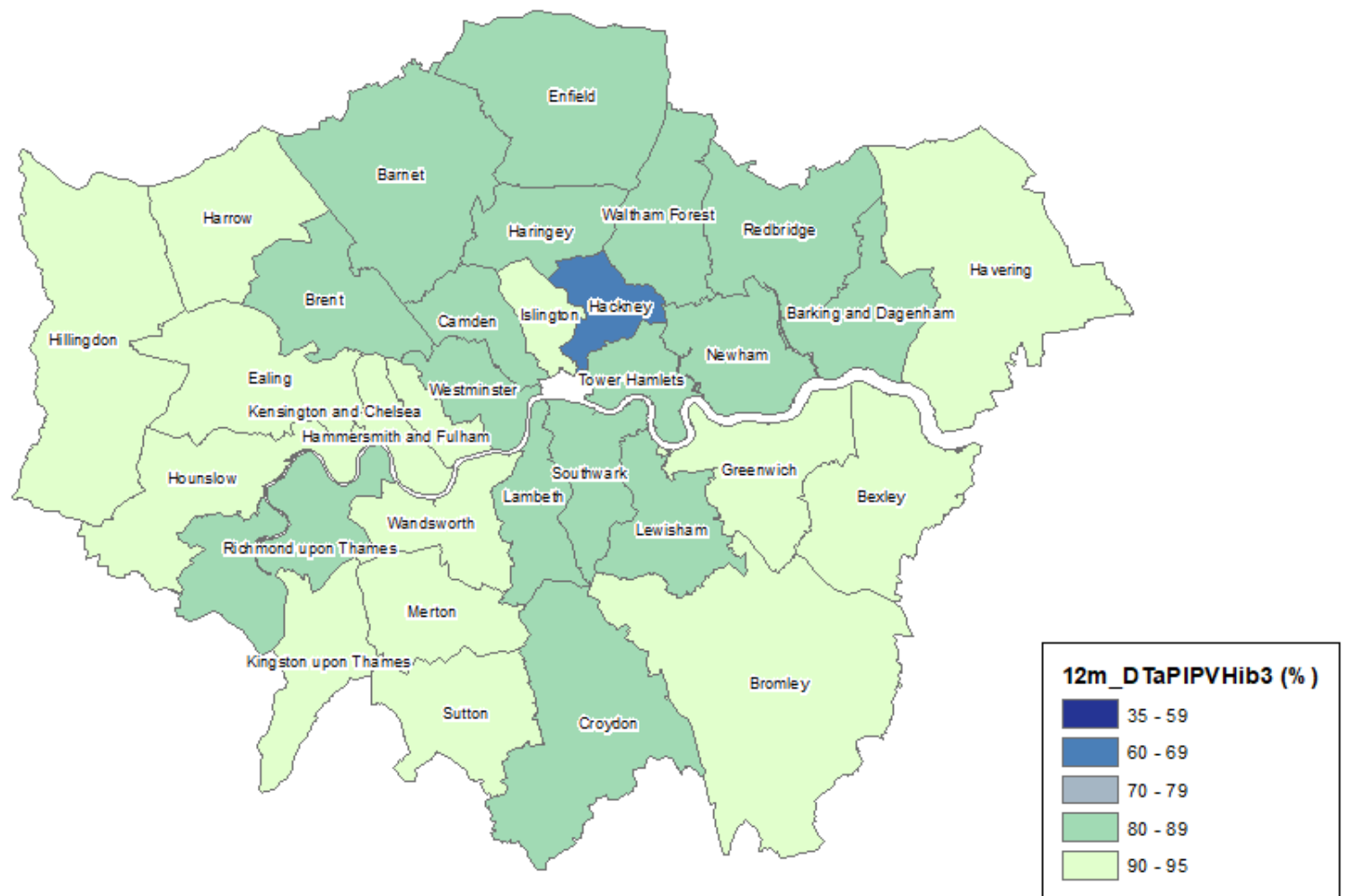
Source: <https://fingertips.phe.org.uk/>

Percentage of children vaccinated by their fifth birthday with DTaP/IPV/Hib in London by Borough



Source: UKHSA COVER data January to March 2022

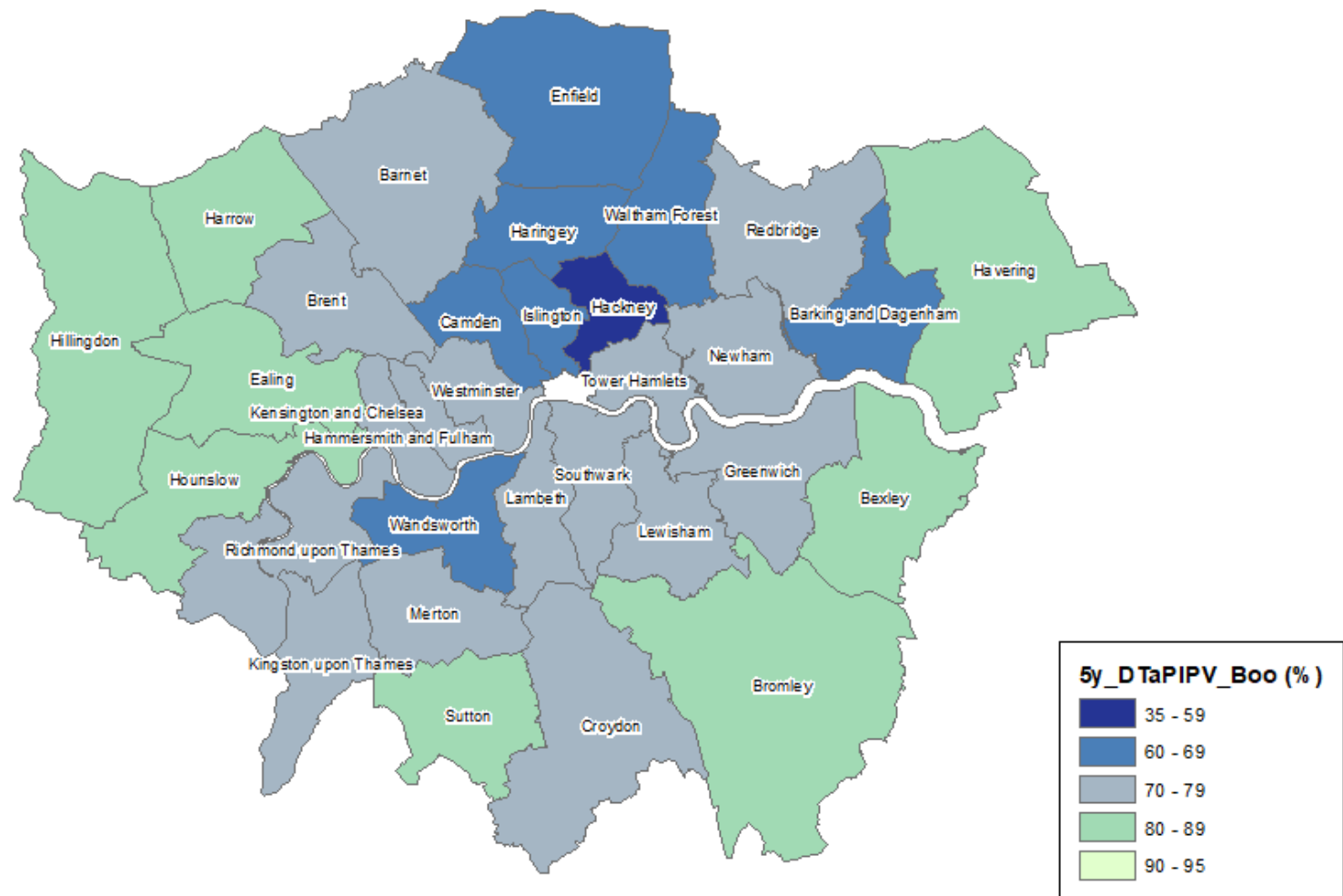
Primary vaccine course coverage at 12 months of age by London Local Authority, (October to December 2021) Source: UKHSA



London: **86.6%**
Range: 93.4% to 61.0%

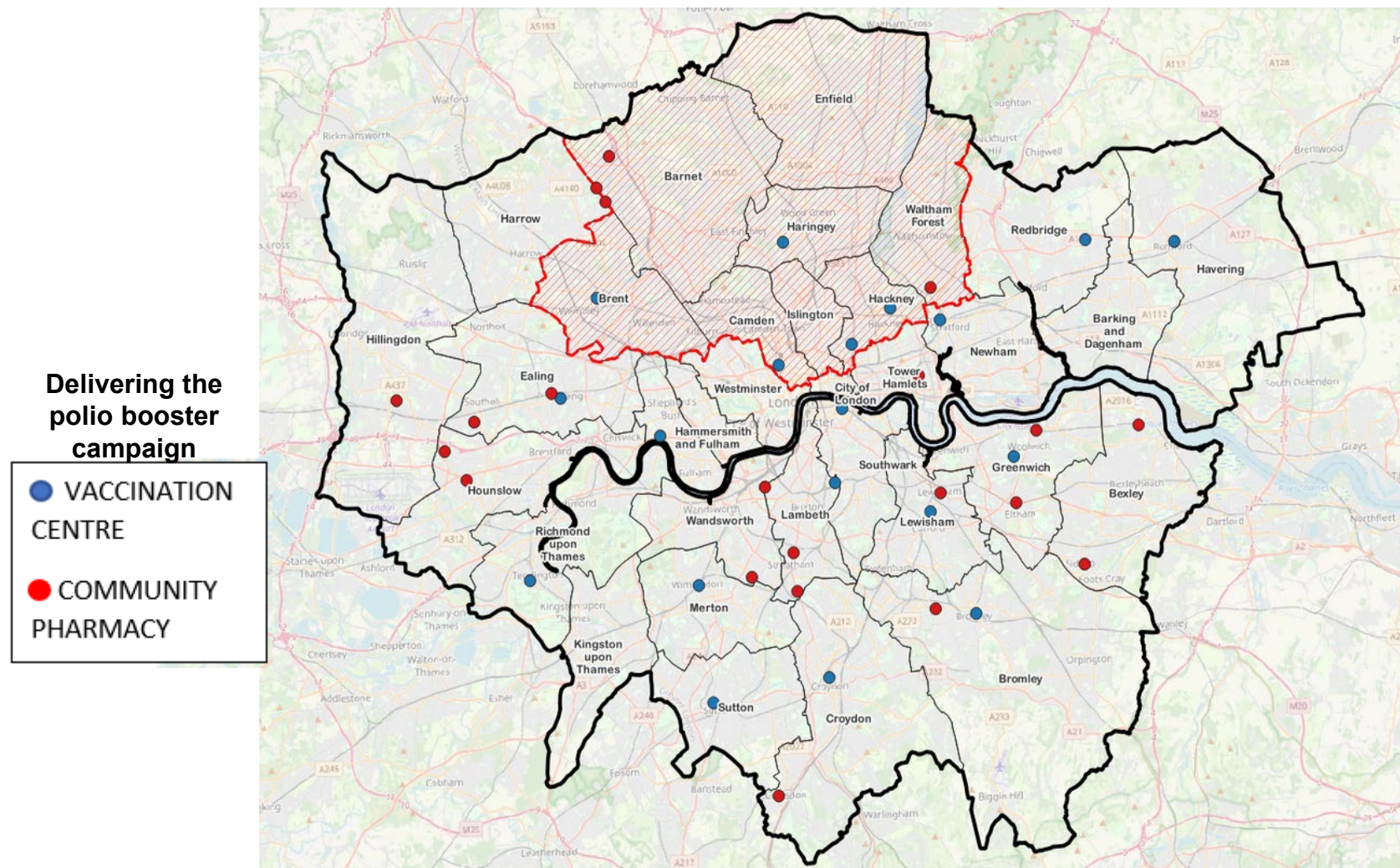
Coverage is below 85% in 8 out of 33 London Local Authorities

Pre-school booster coverage at 5 years of age, by London Local Authority, (October to December 2021) Source: UKHSA



London: **71.4%**
Range: 84.7% to 54.2%

London map indicates those boroughs felt to be at higher risk based on wastewater sampling



***Caveat:** This map was updated on the 8th of September. There are daily updates as new sites opening every day at the moment. It also doesn't capture activity taking place in GP practices or delivered by SAIS providers.

London System Response



- A partnership approach



- Situation Investigation



- The Joint Committee for Vaccinations and Immunisation (JCVI) advice



- Delivery



- Healthcare professionals alerted



- Support for specific health populations

Campaign launched to boost polio vaccination rates in strictly Orthodox Stamford Hill



Hackney Council working on plan to spread awareness in the community after deadly virus was detected in sewage in the capital

NEWS 7 JT

Polio outbreak reveals rare risk of oral vaccine

For years, global health officials have used billions of drops of an oral vaccine in a remarkably effective campaign aimed at wiping out polio in its last remaining strongholds – typically, poor, politically unstable corners of the world.

Now, in a surprising twist in the decades-long effort to eradicate the virus, authorities in Jerusalem, New York and London have discovered evidence that polio is spreading there.

The original source of the virus? The oral vaccine itself.

Scientists have long known about this extremely rare phenomenon. That is why some countries have switched to other polio vaccines. But these incidental infections from the oral formula are becoming more glaring as the world inches closer to eradication of the disease and the number of polio cases caused by the wild, or naturally circulating, virus plummets.

Since 2017, there have been 396 cases of polio caused by the wild virus, versus more than 2,600 linked to the oral vaccine, according to figures from the World Health Organization and its partners.

"We are basically replacing the wild virus with the virus in the vaccine, which is now leading to new outbreaks," said Scott Barrett, a Columbia University professor who has studied polio eradication. "I would assume that countries like the U.K. and the U.S. will be able to stop transmission quite quickly, but we also thought that about monkeypox."

The latest incidents represent the first time in several years that vaccine-connected polio virus has

turned up in rich countries.

Earlier this year, officials in Israel detected polio in an unvaccinated 3-year-old, who suffered paralysis. Several other children, nearly all of them unvaccinated, were found to have the virus but no symptoms.

In June, UK authorities reported finding evidence in sewage that the virus was spreading, though no infections in people were identified. Last week, the government said all children in London ages 1 to 9 would be offered a booster shot.

In the U.S., an unvaccinated young adult suffered paralysis in his legs after being infected with polio, New York officials revealed last month. The virus has also shown up in New York sewers, suggesting it is spreading. But officials said they are not planning a booster campaign because they believe the state's high vaccination rate should offer enough protection. Genetic analyses showed that the viruses in the three countries were all "vaccine-derived," meaning that they were mutated versions of a vaccine that originated in the oral vaccine.

The oral vaccine at issue has been used since 1988 because it is cheap, easy to administer – two drops are put directly into children's mouths – and better at protecting entire populations where polio is spreading. It contains a weakened form of the live virus.

But it can also cause polio in about two to four children per 2 million doses. (Four doses are required to be fully immunized.) In extremely rare cases, the weakened virus can also sometimes mutate into a more dangerous form and spark outbreaks, especially in

places with poor sanitation and low vaccination levels.

These outbreaks typically begin when people who are vaccinated shed live virus from the vaccine in their faeces. From there, the virus can spread within the community and, over time, turn into a form that can paralyze people and start new epidemics.

Many countries that eliminated polio switched to injectable vaccines containing a killed virus decades ago to avoid such risks; the Nordic countries and the Netherlands never used the oral vaccine. The ultimate goal is to move the entire world to the shots once wild polio is eradicated, but some scientists argue that the switch should happen sooner.

"We probably could never have gotten on top of polio in the developing world without the (oral polio vaccine), but this is the price we're now paying," said Dr. Paul Offit, director of the Vaccine Education Center at the Children's Hospital of Philadelphia. "The only way we are going to eliminate polio is to eliminate the use of the oral vaccine."

Aidan O'Leary, director of WHO's polio department, described the discovery of polio spreading in London and New York as "a major surprise," saying that officials have been focused on eradicating the disease in Afghanistan and Pakistan, where health workers have been killed for immunizing children and where conflict has made access to some areas impossible.

Still, O'Leary said he is confident Israel, Britain and the U.S. will shut down their newly identified



outbreaks quickly.

The oral vaccine is credited with dramatically reducing the number of children paralyzed by polio. When the global eradication effort began in 1988, there were about 350,000 cases of wild polio a year. So far this year, there have been 19 cases of wild polio, all in Pakistan, Afghanistan and Mozambique. In 2020, the number of polio cases linked to the vaccine hit a peak of more than 1,100 spread out across dozens of countries. It has since declined to around 200 this year so far.

Last year, WHO and partners also began using a newer oral polio vaccine, which contains a live but weakened virus that scientists believe is less likely to mutate into a dangerous form. But supplies are limited.

To stop polio in Britain, the U.S. and Israel, what is needed is more vaccination, experts say. That is something Columbia

University's Barrett worries could be challenging in the COVID-19 era.

"What's different now is a reduction in trust of authorities and the political polarization in countries like the U.S. and the U.K.," Barrett said. "The presumption that we can quickly get vaccination numbers up quickly may be more challenging now."

Oyewale Tomori, a virologist who helped direct Nigeria's effort to eliminate polio, said that in the past, he and colleagues balked at describing outbreaks as "vaccine-derived," wary it would make people fearful of the vaccine.

"All we can do is explain how the vaccine works and hope that people understand that immunization is the best protection, but it's complicated," Tomori said. "In hindsight, maybe it would have been better not to use this vaccine, but at that time, nobody knew it would turn out like this."

JT 4 NEWS

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17 AUGUST 2022

All London children aged 1-9 to be offered polio vaccine

Following the discovery of type 2 vaccine-derived poliovirus in sewage in north and east London, the Joint Committee on Vaccination and Immunisation (JCVI) has advised that a targeted inactivated polio vaccine (IPV) booster dose should be offered to all children between the ages of 1 and 9 in all London boroughs.

This will ensure a high level of protection from paralysis and help reduce further spread of the virus.

Nationally, the overall risk of paralytic polio is considered low because most people are protected from this by vaccination.

Many countries globally provide an additional dose of polio-containing vaccine as part of their childhood vaccination schedule. The NHS in London will contact parents when it's their child's turn to come forward for a booster or catch-up polio dose – parents should take up the offer as soon as possible.

The programme will start with the areas affected, where the poliovirus has been detected and

vaccination rates are low. This will be followed by rapid rollout across all boroughs.

This booster dose will be in addition to the NHS childhood vaccination catch-up campaign across London, where childhood vaccination uptake is lower than the rest of the country. It's important all children aged 1 to 9 – even if up to date with their vaccinations – accept this vaccine when offered to further strengthen their protection against the poliovirus.

Following the findings earlier this year of type 2 poliovirus (PV2) collected from the Beckton sewage treatment works, further upstream sampling undertaken by the UK Health Security Agency (UKHSA) and the Medicines and Healthcare products Regulatory Agency (MHRA) has now identified at least one positive sample of the poliovirus, currently present in parts of the following boroughs:

- Barnet
- Brent
- Camden
- Enfield

- Hackney
- Haringey
- Islington
- Waltham Forest

The sampling has also detected the virus in lower concentrations and frequency in areas adjacent to the Beckton catchment area to the South (immediately below the Thames) and to the east of Beckton. However, it is not clear whether the virus has established itself in these areas or if the detections are due to people from the affected area visiting these neighbouring areas.

The level of poliovirus found and the high genetic diversity among the PV2 isolates suggests that there is some level of virus transmission in these boroughs which may extend to the adjacent areas. This suggests that transmission has gone beyond a close network of a few individuals.

A total of 116 PV2 isolates have been identified in 19 sewage samples collected in London between 8 February and 5 July this year, but most are vaccine-like virus and only a few have sufficient



mutations to be classified as vaccine derived poliovirus (VDPV2).

VDPV2 is of greater concern as it behaves more like naturally occurring 'wild' polio and may, on rare occasions, lead to cases of paralysis in unvaccinated individuals.

UKHSA is working closely with health agencies in New York and Israel alongside the World Health Organisation to investigate the links between the poliovirus detected in London and recent polio incidents in these 2 other countries.

Dr Vanessa Saliba, Consultant Epidemiologist at UKHSA, said:

No cases of polio have been reported and for the majority

of the population, who are fully vaccinated, the risk is low. But we know the areas in London where the poliovirus is being transmitted have some of the lowest vaccination rates. This is why the virus is spreading in these communities and puts those residents not fully vaccinated at greater risk.

Polio is a serious infection that can cause paralysis but nationally the overall risk is considered low because most people are protected by vaccination. The last case of polio in the UK was in 1984, but decades ago before we introduced the polio vaccination programme around 8,000 people would develop paralysis every year.

Work to increase uptake in the Jewish Community

- A three phase approach for London
- **Phase 1: Immediate response-**
- **Phase 2: Discovery phase-** Working with the community:
 - Discussed with the London Jewish Health Partnership -6 September 2022
 - Deep dive workshop with the community – September 15th 2022
 - Panel discussion – Jewish Medical Association. – September 20th 2022
 - Plans for engaging with key health partners
- **Phase 3: Action based delivery in response to discovery**
- Evaluation led by LSHTM and UKHSA



Other vaccine preventable diseases:



Key resources and further information

Key guidance and resources for all immunisation programmes: [Immunisation - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/collections/immunisation).

The complete routine immunisation schedule: [Complete routine immunisation schedule - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/complete-routine-immunisation-schedule)

The immunisation Green Book: [Immunisation against infectious disease - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/immunisation-against-infectious-disease)

NHS information on polio: [Polio - NHS \(www.nhs.uk\)](https://www.nhs.uk/conditions/polio)

NHS information on vaccines and when to have them: [NHS vaccinations and when to have them - NHS \(www.nhs.uk\)](https://www.nhs.uk/conditions/vaccinations)

NHS guidance on booking your child's vaccination appointment: [Booking your child's vaccination appointment - NHS \(www.nhs.uk\)](https://www.nhs.uk/conditions/booking-your-childs-vaccination-appointment)

WHO resource on having conversations about vaccinations: [How to talk about vaccines \(who.int\)](https://www.who.int/publications-detail/11-how-to-talk-about-vaccines)

Health publications resources to order: [Home - Health Publications](https://www.healthpublications.org.uk/)



Have your polio vaccine now