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DEAR READER,

If you have been asking yourself whatever happened to the April EIOS newsletter, well, it decided to become a May newsletter instead. Temperamental thing it is, but can you blame it? In German, May is nicknamed "Wonnemonat" which translates into "month of bliss" for a reason!

This edition's Spotlight focuses on the first "EIOS Expo" that gathered hundreds of health intelligence professionals from across Brazil to share their experience with implementing EIOS at subnational level. In this newsletter you will further learn about how the EIOS system is being used at WHO to monitor health threats related to the war in Ukraine and how Singapore is taking the lead in promoting One Health collaboration via EIOS in the region. EIOS trainers report about face-to-face trainings in the Democratic Republic of Congo, Egypt and Qatar, and we recap the latest system updates. In our new section "Updates from Berlin" we highlight some key events organized by the new WHO Hub for Pandemic and Epidemic Intelligence and this edition's Community Close Up features the United Kingdom EIOS community.

Sounds blissful? We sure hope so.

With sincere greetings, The EIOS Core Team

SPOTLIGHT

BRAZIL EIOS EXPO 2022: SHARING EIOS EXPERIENCE ACROSS THE COUNTRY

Since its first implementation in October 2019, the Brazil Ministry of Health (MoH) has been embracing EIOS to strengthen event-based surveillance (EBS) in the country. Over the last year, the EIOS system has been implemented at the municipal, state, and federal levels in Brazil. As of May 2022, a total of 461 health professionals across 142 Strategic Health Surveillance Units (Centro de Informações Estratégicas em Vigilância em Saúde – CIEVS) and 22 Disaster Surveillance Units (Vigidesatres) have been trained and the expansion continues, with an aim to reach all CIEVS in the country.

"EIOS will allow us to have more agility in risk assessments and direction of surveillance actions related to public health emergencies, so that we can not only communicate better here in Brazil, but also with the world, under the leadership of the WHO."

Marcelo Queiroga, Minister of Health



EXPO kicks off first nationwide EIOS event

The EIOS EXPO was held in Brasilia, Brazil, on 23 March 2022. The event was organized by the Brazil MoH in collaboration with the Pan American Health Organization/ World Health Organization (PAHO/WHO) and aimed at sharing experiences between EIOS users in Brazil. This first EIOS EXPO welcomed nearly 150 attendees, with health intelligence professionals from across the country showcasing their experiences at the local level. In addition to sharing lessons learned, this event was also an opportunity to have a better understanding of the specific ways users are benefitting from EIOS and how it is improving their daily workflow.

"I am inspired by the public health workforce in Brazil, in sharing their experience in using EIOS. Expanding its use and deepening its functions to benefit the global Public Health Intelligence community will be a priority for the WHO Hub for Pandemics and Epidemics," says Chikwe Ihekweazu, Assistant Director-General at the WHO Health Emergencies Programme and leader of the new Hub, who visited the event.

Integrated in daily workflow

Most users stated that using the EIOS system is now a part of their daily work and has resulted in a more efficient way to conduct EBS due to the availability of nearly all relevant sources within the same platform. Not only does the system allow them to detect signals in a timely and more organized manner, it also enables a simpler workflow between the municipal, state, and federal levels as they are able to collaborate within the platform and elaborate daily EBS. Success stories and advantages include the early detection of an outbreak of COVID-19 in a scholar setting, identifying a cluster of Haff disease in a community, and monitoring for potential events of interest in bordering areas, among others.

EIOS has made the process of capturing rumors easier and faster, with this it is possible to invest more time and human resources in the processes of responding, monitoring and evaluating the rumors captured.

CIEVS Distrito Federal

The country anticipates holding future EIOS EXPO events to continue strengthening the collaboration and exchanges of best practices within the country. This type of event will be encouraged to share best practices between countries in the Region of the Americas and hopes to inspire similar meetings of communities within the global EIOS network in the future.

Ildefonso, S. (PAHO/WHO) in collaboration with the PAHO/WHO Brazil Country Office

Pictured above Dr Chikwe, ADG WHO, and Dr Queiroga, Brazil's Minister of Health, at the EIOS Expo. All photos provided by PAHO/





Dr Chikwe speaking at opening ceremony.



Exhibition Hall

COLLABORATION

The role of EIOS in event-based surveillance activities for the Ukraine crisis

The crisis in Ukraine escalated on 24 February 2022 following heightened tensions of the conflict in the eastern part of the country that began in 2014. By 1 June 2022, 6.8 million people had fled Ukraine, 8 million were internally displaced and over 4 100 civilians had died (WHO Situation Report 2 June 2022).

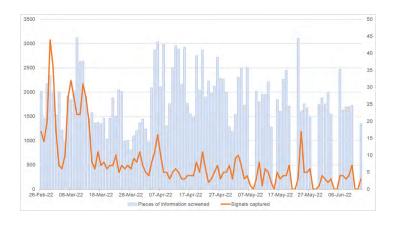
On 26 February 2022, in a collaboration between WHO Headquarters and the Regional Office for Europe (EURO), the Health Information pillar under the WHO Ukraine crisis incident management support team (IMST) began active event-based surveillance (EBS) for the early detection of public health threats in Ukraine and the surrounding countries hosting refugees.

At the inception of the EBS activities, the scope of priority threats (or categories) being monitored was wide; however, over time, this has been streamlined to focus on six: healthcare capacity, infectious diseases, technological hazards, mass casualties, challenges with water supplies and extreme weather events. The EBS process involves the daily scanning for signals from different pieces of information captured in a board on the EIOS system and communication shared via email with the WHO Headquarters office. Signals detected are reviewed and analyzed using available data from indicator-based surveillance (IBS) followed by a verification process with the relevant national focal point through the International Health Regulations (IHR) 2005. Signals detected are also shared with the Ukraine crisis IMST and the respective technical teams for further follow-up and response.

All these EBS activities have heavily relied on EIOS. As of 31 May, almost 170 000 pieces of information have been scanned through the EIOS system since the crisis escalated in February and over 800 signals have been captured into a tracker, whose information is shared in an internal dashboard to increase accessibility for the response team. Most signals captured fall in the category of healthcare capacity and technological hazards. More than 30 signals on detection, preparedness, and response of infectious diseases (e.g., diphtheria, HIV, leptospirosis, rotavirus, and tuberculosis) have been captured and verified. With the evolving nature of the crisis, the scope of the EBS activities remains dynamic. EIOS can be adjusted to suit the changing objectives of the emergency response; thus, it has proved to be an instrumental tool during this ever-evolving process.

Compiled by the EBS Team for Ukraine emergency IMST, WHO Health Emergencies Programme

Fig. 1: Daily pieces of information screened and signals captured, 26 February – 13 June 2022



Engagements across the globe

Engagement and collaboration are a big part of our mission as the EIOS Core Team. Besides the ongoing collaboration with EIOS communities and active support to teams performing PHI activities on acute events such as mass gatherings, conflict, or disease outbreaks (ref. also to the Category Corner), team members took part in a number of engagement meetings and activities. In the following some highlights from the past months:

Utilising novel data streams for outbreak analysis-workshop, hosted

by Imperial College London from 28-29 March: Our data scientist Thijs joined public health experts from the United Kingdom, Germany, France, the USA, and WHO in a discussion around various types of data used and lessons learned from the COVID-19 pandemic. Several data sources were successfully exploited for the first time, for example satellite images of cemeteries indicating unusual or excess patterns of mortality. Other data

collection methods that already existed were employed at an unprecedented scale, such as genetic surveillance for COVID-19 and wastewater sampling. However, this explosion in data availability has also led to new challenges, in particular concerning the scalability, sustainability, and equity in the generation, access, analysis, and use of these data. Workshop participants are preparing a paper to highlight these issues and call for action.

Following the successful One Health Round Table and EIOS workshop in Singapore in April (ref. pg 4), our Team Lead Philip, together with III Engagement Coordinator Yasmin met with counterparts at the Korea Agency (KDCA) in Osong, Republic of Korea on 02-03 May. The visit was an opportunity to introduce the new WHO Pandemic Hub, provide an update on the EIOS initiative and follow up on the agencies experience since implementing the EIOS system in 2019. It was further a chance to discuss areas and modes for continued collaboration and Korea's commitment to taking a leading role on PHI in the region.

In early May, Dusan and Mike, our solutions architect and KR2 project manager, attended the Knowledge **Graph Conference 2022** in New York, USA. The conference was a place for sharing experiences and knowledge about implementation and use of linked data in industry, where there is an increasing recognition of the necessity to integrate information across different sectors and in academia, where semantic technologies have been developed for over twenty years. Highlights included a healthcare and life sciences symposium, as well as numerous, panels and presentations about different aspects of data architecture and graph data science, including topics of using AI and public data for health-related applications.

The two connected with numerous knowledge modelling and graph data science experts and plan follow up meetings to explore opportunities for collaboration to accelerate our plans for development of an open web of data, information, and insights for public health knowledge representation and reasoning (KR2).

EIOS

Community

First EIOS Community Webinar: Brazil and Sudan

On 5 April 2022, we organized the first EIOS Community Webinar with experts from Brazil and Sudan who presented their experience with conducting public health intelligence (PHI) activities and implementing EIOS in their

With over 250 registrants and more than 150 people attending from 51 different countries, this first session was a great success. A big THANK YOU to our presenters Janaina Sallas from the Brazil Ministry of Health and Ismail Mohamed and Wael Motwakel from the Federal Ministry of Health of Sudan.

Janaina shared Brazil's experience and lessons learned from expanding its public health intelligence activities and implementing the EIOS system at the subnational level. Ismail and Wael demonstrated Sudan's experience with adopting the EIOS system for media scanning to detect public health threats and emergencies, how this improved their efficiency, and how it fits with their newly developed Watch and Alert mode.

This webinar is part of the new EIOS Community Webinar series where public health intelligence professionals around the globe present their first-hand experiences offering the opportunity to exchange experiences between EIOS users and for communities to learn from each other.

Access the recording here (Passcode: EIOS2022!).

Coordination Group

and priorities of the initiative on behalf of all stakeholders. This year, there is a chance for new members to join the group, as well as for existing representatives to recandidate for their seat in the CG. The process is outlined in the CG's Terms of

Representation updates

- **ECDC:** Gianfranco Spiteri replaces Jordi Borrell Pique. **WHO:** Esther Hamblion replaces Emilie Peron. **WOAH** (formerly known as OIE): Paula Caceres-Soto has

News from the EIOS Core Team

The new WHO Pandemic Hub is taking shape: both literally as well as metaphorically. While parts of the new office in Berlin are still under construction, and recruitment as well as other key administrative processes to "set up shop" are ongoing, the Hub's workplan already comprises 14 projects in various stages of development, including the EIOS initiative. All of them are grounded in our mission to support countries as well as regional and global actors to avert and manage public health threats. As part of the workplan, a multitude of activities, engagements and collaborations have already taken off. Some of these are highlighted on the following pages, others are described in more detail in the monthly Hub newsletter (refer also to our new section "Updates from Berlin" on page 6).

Having gained additional impetus from the creation of the Hub, the first half of the year has been busy for members of the EIOS Core Team (ECT), many of whom are in the process of moving to Berlin. As the initiative, our activities and responsibilities continue to grow, there are a lot of interesting opportunities in a range of different disciplines currently posted on the WHO career portal Stellis or coming up over the next weeks and months: keep an eye out if you would like to work with us!



Greetings from Checkpoint Charlie: The ECT traveled to Berlin at the beginning of the year to work on annual activity planning, meet new colleagues and visit the new office building.

Upcoming community events

Entering the second half of 2022, the team is preparing for two important events: a new and improved EIOS Training of Trainersworkshop (ToT) in September in Berlin and the fourth EIOS Global Technical Meeting (GTM) planned for late November. Equipping more EIOS system users with the capacity to train others on the use of the system is a crucial prerequisite for continued EIOS expansion and support to Member States and other collaborating organizations and networks. The 5-day workshop, that will also include principles of adult learning and training facilitation skills, will bring together existing and future trainers from across all six WHO regions and key collaborators from various EIOS communities.

Preparations for the 2022 EIOS GTM are just getting started. Following last year's virtual edition, we are looking forward to organizing a physical event again this year. As community building, networking, and personal exchange are some of the event's main objectives, we can't wait to meet in person again! Picking up where we left off after our last in-person GTM in 2019, where Egypt emerged as a strong contender to host the next event, we are working together closely with colleagues from the WHO Regional Office for the Eastern Mediterranean to plan another exceptional meeting. While we cannot disclose too much yet – both exact dates and location are still being confirmed – we are currently aiming for the event to take place in the last week of November. So mark your calendars and we will keep you posted! For those of you who missed last year's event or would like to rewatch some of your favorite sessions, all session recordings and additional information from the 2021 GTM can now be accessed on the EIOS website.

EIOS Training in DRC

As part of AFRO's continuous effort to strengthen the capacity of event-based surveillance in the region and to contribute to the early warning of public health events, an EIOS training was organized from 10-13 March 2022 in the Democratic Republic of the Congo (DRC). The training was held some 300 km outside the capital city in Matadi, a place renowned for its quiet and studious environment. It was partially facilitated in-person as well as by online instruction.

A total of 17 individuals participated in the workshop, including health professionals from the Ministry of Health, officials from the Ministry of Agriculture and Livestock, and WHO country office staff. Participants from different backgrounds were specifically selected to reflect a "One Health" approach. In addition to the lively theoretical sessions, practical sessions predominated to enable participants to become familiar with the EIOS system. Exercises and evaluations with Poll Everywhere were deemed particularly interesting by the participants.

The three-day training provided an opportunity for enriching interaction between the participants and the facilitators. During these exchanges, participants also discussed ideas for system improvements that would allow users to work more easily even with a weak internet connection.

Kambale, F., Ramazani, M. and Mize, V. WHO AFRO

After two years of remote workshops, EMRO trains Qatar and Egypt face-to-face!

In 2022, the WHO Regional Office for the Eastern Mediterranean (EMRO) kicked off the third expansion phase of the EIOS initiative to Member States in the region. In January and February, the EIOS focal points conducted virtual EIOS trainings for a new team in Lebanon and onboarded Morocco as a new community.

Benefitting from a stabilization of the COVID-19 situation in the region and responding to the high demand on face-to-face training, the team then facilitated first in-person EIOS system trainings of 2022! In Q1, the team also provided an extended refresher for the Ministry of Health in Egypt and welcomed Qatar as the latest addition to the initiative.

During the workshop in Qatar, which was held from 28-29 of March 2022, public health professionals from the Qatar Ministry of Public Health were trained in the use of the EIOS system, ran simulations on potential events, and developed a monitoring strategy based on their national context. The 2022 FIFA World Cup, the quadrennial international men's football championship contested by the national member associations of FIFA, is scheduled to take place in Qatar from 21 November to 18 December 2022. Qatar is using the EIOS initiative to strengthen their surveillance system ahead of this international mass gathering, for which they are expecting more than 1.5 million visitors from all over the world.

Ghanem, H. WHO FMRO



Community

Singapore enhances One Health approach via EIOS

There is no denying the importance of applying One Health (OH) principles to Public Health Intelligence (PHI). If it had not been clear before, it certainly is one of the key lessons from the COVID-19 pandemic. Actors involved in safeguarding public health in Singapore have taken this lesson to heart and are taking proactive steps towards closer collaboration between various agencies.

As one of their first actions, the Singapore Ministry of Health convened a Round Table (RT) on this topic on 25 April 2022. Chaired by members of the EIOS Core Team, the RT catalysed a vivid discussion around surveillance challenges faced by different agencies, how to implement PHI activities with a OH approach, and how the EIOS initiative and WHO Pandemic Hub could play a role in this endeavour.

Representatives from four relevant entities, including the National Parks Board, the Singapore Food Agency, the National Environment Agency, and PUB, Singapore's National Water Agency, actively participated in the RT. Experts from the World Organisation for Animal Health (WOAH) and the Food and Agriculture Organization (FAO) joined remotely, sharing their experience with using the EIOS system for OH activities.

Concluding the meeting, participants agreed that while Singapore's unique characteristics, including size, geographic location and role as a global travel and trade hub, bear their own challenges, they also put the country in a prime position to play an active role in strengthening public health security beyond its borders. Starting at the national level, they expressed their commitment to continue to exchange information and collaborate more closely on One Health intelligence.

EIOS Workshop

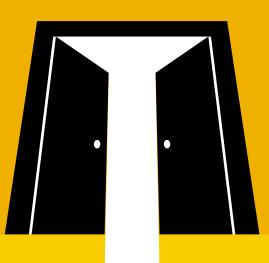
Over the following three days (26 to 29 April), about 25 participants from all five agencies participated in the faceto-face EIOS system training. Through interactive learning with sufficient time for hands-on exercises including self-practice and case studies, participants were trained on key principles of PHI and event-based surveillance, the EIOS system and how to apply it to relevant work at their respective agencies. Colleagues from WOAH and FAO contributed with real life examples of using the EIOS system and answered questions from participants.

Discussions focused on monitoring objectives of the five participating entities and trainees were tasked with identifying areas and concrete ways for collaboration among the agencies to improve One Health principles at national level. A follow up is planned for early July.



ace-to-face engagements with EIOS communities across three regions: OH Round Table on Singapore (top) and (bottom left to right) EIOS system workshops in DRC, Qatar and ingapore. Photos: WHO.

WHAT'S NEW in EIOS?



CATEGORY CORNER

Since the beginning of the year, the EIOS Core Team (ECT) actively supported event-based surveillance of mass gathering events and acute emergencies, including the Beijing 2022 Winter Olympics, the 2022 Commonwealth Games (starting in July), the war in Ukraine and the recent outbreak of Monkeypox.

As well as providing advice on monitoring activities via the EIOS system, this also meant the creation of numerous new categories and the extension of language coverage for existing priority categories. Related work covered a wide range of topics including conflict, disasters, chemical threats, nuclear safety, humanitarian aid, water shortage, food security and food aid, health system capacity, refugees and internally displaced persons, attacks on healthcare, vaccine-preventable diseases and immunization.

In collaboration with multidisciplinary experts from the global EIOS community, we developed a number of new categories further strengthening the system's sensitivity for One Health, all hazards monitoring. This included new categories targeting emerging diseases in wildlife, relevant additions for the Infant and Young Child Feeding (IYCF), Medical Products of Human Origins (MPHO Safety) expert networks and substandard and falsified medical products. We also provided additional categories across all communities for monitoring Adenovirus, Cyclosporiasis, Herpes B virus, Havana Syndrome, H10N3, H3N8, Landslides, Men who have sex with men (MSM), Chandipura virus, Herpes Simplex virus, Bornavirus, Human Papilloma virus, Candida Auris, Colorado Tick Fever, Parvovirus B19, BK virus, JC virus, Human T-lymphotropic Virus (HTLV), Plasmodium, Trypanosoma and Sandfly.

We strive to provide categories that cover various languages and dialects and provide articles relevant to users with limited noise. By the end of May 2022, we added additional translations for nearly 100 categories within the EIOS system including new local languages such as Bahasa and Bengali. In addition, we have worked to refine several category definitions for priority diseases resulting in decreased noise and improved functionality.

If a category you are interested in does not exist yet or think an existing one could use some refinement to better support your monitoring objective, please do not hesitate to contact us!

EIOS system updates

As a constantly evolving system, a range of big and small improvements have been made to the EIOS system in the first half of the year. We have summarized some of the main new releases from April 2022 below. Detailed information on each of these and other updates can be found in the reference manual under the Help and Feedback-tab on the EIOS system. For a demonstration of the new functionalities, watch the EIOS webinar from 31 May 2022 (here; passcode: EIOS2022!). Links to all EIOS webinars can be found under the system's Trainingtab.

Mentioned Entities

A Mentioned Entities filter now allows a user to select articles based on persons, organisations and other entities that have been automatically identified in the text. For example, if a user is interested in filtering on all articles that include a mention of the World Health Organization, they can now do so. The detailed article view shows all mentioned entities tagged in the article. Users can highlight the corresponding text in the article to show where the entity is mentioned.

Revised layout of the article row

The list of articles on the monitoring page includes several icons for information and further action (e.g. magnifying glass to view article details; a check mark to show who has read the article). These icons have now been rearranged on the monitoring page view for better visibility.

Revised layout of the Main Article panel

To better organize the information related to an article that is displayed in the detailed article view, the Main Article Information is now arranged in different sections for clarity and simplification.

Mentioned location labels

The label for mentioned locations in articles has been updated to "Mentioned Geographical Areas" and now also includes the labels "countries, territories and areas". Additionally, some countries, territories and areas names were updated to follow the United Nations Terminology.







WHO Hub for Pandemic and Epidemic Intelligence

Since January 2022, the lead of the EIOS initiative is hosted within the new WHO Hub for Pandemic and Epidemic Intelligence (Hub) based in Berlin, Germany. The Hub will support countries, regional and global actors to address future pandemic and epidemic risks with better access to data, better analytical capacities, and better tools and insights for decision making. It is embedded in WHO's Health Emergencies Programme (WHE). Building on expertise across disciplines, sectors, and regions, the Hub will leverage WHO's convening power to foster global solutions built on an architecture of global collaboration and trust. As one of the Hub's flagship initiatives, EIOS is one of the main vehicles for building a strong public health intelligence community of practice, as well as a multidisciplinary network to support it.

Innovation Forum

To address the need for better communication and coordination between actors involved in epidemic intelligence, the Hub convened representatives of the global surveillance community, including from Member States, philanthropy, NGOs, academia and the private sector over two days in early February 2022. About 55 colleagues from 16 organisations participated in the discussion, shared investment priorities, and identified opportunities for collaboration.

Following this first successful meeting. its key highlights were published in Eurosurveillance and the Pandemic Forum was established as a platform for ongoing exchange and discussion among international experts and thought leaders in the field. Nearly 60 participants from 26 organizations attended the second meeting on 12 May to discuss ways of operationalizing data aggregation and linkage, its analytical value and the continued and open access to (non-)

health data for pandemic and epidemic management. A report of the meeting will be published in the upcoming weeks and the next session is planned for 14 July

Speaker Series

On 5 July 2022, 7:30-9:00 pm (CEST), the Hub will kick off its new Speaker Series "Complexity of Pandemics". Under the title Securing Human, Animal and Planetary Health, the first session will explore how surveillance efforts in the intertwined human, animal and planetary health sectors can be aligned in the face of increasingly complex health risks.

Prof Marion Koopmans, Head of the Erasmus University Medical Center's Department of Viroscience in the Netherlands, will join Dr Chikwe Ihekweazu, Director of the WHO Pandemic Hub and WHO Assistant Director-General, as keynote speaker. Prof Ilona Kickbusch, Founder and Chair of the International Advisory Board of the Global Health Centre at the Graduate Institute Geneva. will moderate the event.

The goal of this series, which is organized in collaboration with Charité Berlin, is to highlight the complex multidisciplinary landscape of preventing, predicting, preparing for, and responding to epidemics and pandemics. To join the event remotely please register via this link. We hope to see you there!



Would you like to know more about the Hub and stay up to date with the latest developments and events? Subscribe to the Hub newsletter, visit our website https://www.pandemichub.who.int or contact us at pandemichub@who.int.

COMMUNITY CLOSE-UP:

United Kingdom

Name of Community: United Kingdom Active on EIOS since: August 2021 [as part of the Global Health Security Initiative (GHSI) since 2018] Number of members: 16

HOW MANY DIFFERENT ENTITIES ARE REPRESENTED IN YOUR COMMUNITY?

One: The UK Health Security Agency's (UKHSA) Emerging Infections and Zoonoses (EIZ) team.

WHAT DO YOU USE EIOS FOR?

The EIZ team uses the EIOS system predominantly to detect signals to new or emerging infectious threats occurring globally. These signals are assessed to determine if there is a public health risk and are communicated within UKHSA and across UK Government for either situational awareness, or to initiate appropriate public health and mitigation action where necessary.

Public health intelligence (PHI) derived from the EIOS system is also used to inform the production of several other outputs from the EIZ team, including:

- formal UK risk assessments on notable outbreaks or incidents; guidance on emerging or zoonotic infections for healthcare professionals and the public;
- daily and weekly intelligence reports shared with UKHSA and UK Government teams; and,

monthly *emerging* infections and high consequence infectious disease reports published on the UK

WHAT DO YOU LIKE BEST ABOUT EIOS?

One of the main advantages of using the EIOS system is that there is greater coverage of information sources, which are collated within the platform and are not restricted by language. The system has sophisticated data extraction and categorisation processes, which organise a large amount of information into a more manageable format. It is also beneficial having everything feed into one centralised and easy to use platform, as opposed to having to visit multiple websites independently to gather PHI.

EIOS facilitates collaborative working between countries within communities, and the ability to quickly alert collaborators to signals using the built-in flagging and pinning functions is invaluable. Countries working together can identify, verify and communicate signals more quickly than if one country was working in isolation.

Compiled by the UKHSA's EIZ Team