

出國報告（出國類別：開會）

參加 2024 歐洲世界疫苗大會報告

服務機關：行政院衛生福利部疾病管制署

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出國期間：113 年 10 月 27 日至 113 年 11 月 10 日

報告日期：113 年 12 月 30 日

摘要

2024 歐洲世界疫苗大會（World Vaccine Congress Europe）於西班牙巴賽隆納舉行，聚焦全球疫苗研發的最新進展，以及在疫苗分配和應用中面臨的全球挑戰與突破。本報告將綜述本次會議的核心議題，特別是抗生素抗藥性（AMR）、癌症疫苗、COVID-19 疫苗與呼吸道融合病毒(RSV)疫苗的研發。會議還討論了針對新興傳染病的應對策略。

在 AMR 方面，大會強調了疫苗在減少抗生素使用和抑制抗生素抗藥性方面的潛力。討論議題包括針對結核、瘧疾和金黃色葡萄球菌等細菌感染的創新疫苗技術。與會專家一致認為，疫苗的應用能夠減少對抗生素的需求，從而有助於控制抗生素抗藥性的蔓延。

癌症疫苗的研究方向聚焦於個性化療法的未來，涵蓋基於新抗原（Neoantigen）的個性化癌症疫苗開發，以及結合免疫調節劑和標靶療法的多平台技術進展。與會者討論了基因編輯和 mRNA 技術在癌症疫苗研發中的創新應用，並探討了這些技術如何推動更精確、個性化的癌症治療方案。

針對 COVID-19 和 RSV 疫苗的討論，涵蓋了對現有疫苗的優化以及新疫苗的研發。與會者分享了 COVID-19 疫苗對抗新變種病毒的能力及其全球覆蓋策略。RSV 疫苗則聚焦於高風險族群（如嬰幼兒和老年人）的保護，並探討了其他新興疫苗的最新臨床試驗結果。

透過專家的分享，與會者深入了解了疫苗佐劑的科學基礎、技術創新及實際應用，並探討了疫苗佐劑在公共衛生中的功用，尤其是在增強疫苗效力和降低資源需求方面的優勢。技術創新如何幫助促進全球公共健康也成為討論的重點，然而，安全性與適應性問題提醒我們，在疫苗開發中需要謹慎評估效力與風險，特別是在針對弱勢族群的應用中。

透過參與疫苗相關的大會，不僅能夠深入了解最新的技術發展和研究成果，還是一個拓展國際視野的重要機會。疫苗大會匯集了來自全球的專家學者、公共衛生領袖以及產業代表，參與其中能接觸到不同國家和地區在疫苗研發、生產和接種策略中的獨特經驗與挑戰，從中汲取最新的科研成果與實際經驗，對未來的疫苗推廣工作也具有極大的幫助。

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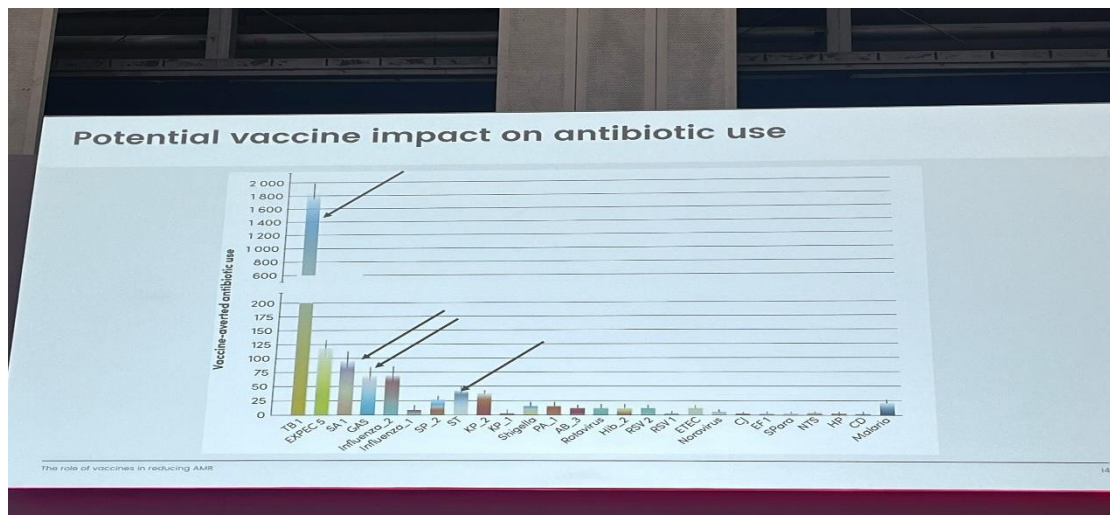
目的

參與本次會議的主要目的關注於 COVID-19 疫苗及其他新興傳染病疫苗的研發進展、挑戰與未來方向。會議提供新知識及研發技術的交流，涵蓋 mRNA 技術、蛋白疫苗優化，以及疫苗免疫效力和長期保護的最新研究成果，凸顯 COVID-19 大流行對全球公共健康與疫苗技術的深遠影響。

會議旨在加深對疫苗研究、開發及生產領域最新進展的理解，並促進與全球專家的交流與合作。議程涵蓋新興疫苗技術、接種公平性、製造技術和供應鏈管理等廣泛主題，為分享最佳實踐和經驗提供機會。參與專題講座和工作坊將深入探索疫苗研發的新機遇，包括基於 RNA 的疫苗技術、抗生素抗藥性疫苗，以及針對易被忽視疾病的解決方案。此外，會議中特別是針對如 Zika 病毒、抗生素抗藥性（AMR）、猴痘等新興疾病的疫苗研發進展，還討論如何應對氣候變化加劇的傳染病擴散問題。人工智慧、免疫學創新和生物製造技術等加速疫苗研發的關鍵領域亦是討論重點。

參與本次會議，我們期望獲得新知識以促進疫苗的可及性與覆蓋率，提升公眾健康成果。同時，會議強調國際合作的重要性，致力於數據共享、技術轉移及提高中低收入國家疫苗可及性。我們希望通過掌握疫苗發展趨勢，無時差的與全球同步參與應對未來公共衛生危機的策略，為提升全球健康安全作出貢獻。

上圖指出疫苗在減少 AMR 相關死亡方面的重要性，特別是針對肺炎鏈球菌和克雷伯氏肺炎桿菌等病原體所造成的主要感染類型（如下呼吸道、血液感染等）。透過提高這些疫苗的接種覆蓋率，可有效減少與 AMR 相關的死亡。



現有和正在研發中的疫苗每年可避免數十億美元的醫院成本和生產力損失，並顯著減少抗生素用量。

Key results – summary

- Vaccines have the potential to annually avert up to **515 000 deaths** and **US\$ 30 billion in hospital costs** associated with AMR, and **2.5 billion antibiotic doses**.
- Existing vaccines** could avert annually up to **106 000 deaths**, **9.1 MLN DALYs**, **US\$ 861 million in hospital costs**, all associated with AMR. These vaccines could also reduce antibiotic use by **142 million DDDs**.
- Vaccines in **late-stage clinical development** could avert annually up to **135 000 deaths**, **5.0 million DALYs**, **US\$ 1.2 billion in hospital costs**, all associated with AMR. They could also reduce antimicrobial use by **1.9 billion DDDs** annually.
- Vaccines in **early clinical development** could avert annually up to **408 000 deaths**, **23.0 million DALYs**, **US\$ 30.0 billion in hospital costs**, all associated with AMR. They could also reduce antimicrobial use by **548 million DDDs** annually.

總結

疫苗每年可避免 515,000 人死亡，節省與 AMR 相關的 300 億美元醫療成本，同時減少 25 億劑抗生素用量。強調疫苗在減少 AMR 所帶來的健康、經濟與抗生素使用的巨大負擔，特別是在不同階段的疫苗發展過程中，其效益逐步擴大。

Key recommendations

- The **impact of vaccines** in reducing AMR **needs to be recognized** by stakeholders in AMR and immunization. Global, regional and national AMR and immunization strategies and implementation frameworks **should include vaccines as interventions to reduce AMR**.
- The **introduction of existing vaccines** should be **accelerated** and their **coverage increased**. All existing paediatric vaccines should reach the immunization targets of IA2030, and the use of vaccines in older age groups should be considered.
- To prepare for the introduction of newly developed vaccines, the **impact of vaccines on AMR should be systematically evaluated** and embedded into existing decision frameworks.
- To enable vaccine development, delivery and implementation to combat AMR, **include AMR endpoints in clinical trials**, develop **PPCs** for impactful vaccines, create **research roadmaps** for challenging vaccines.

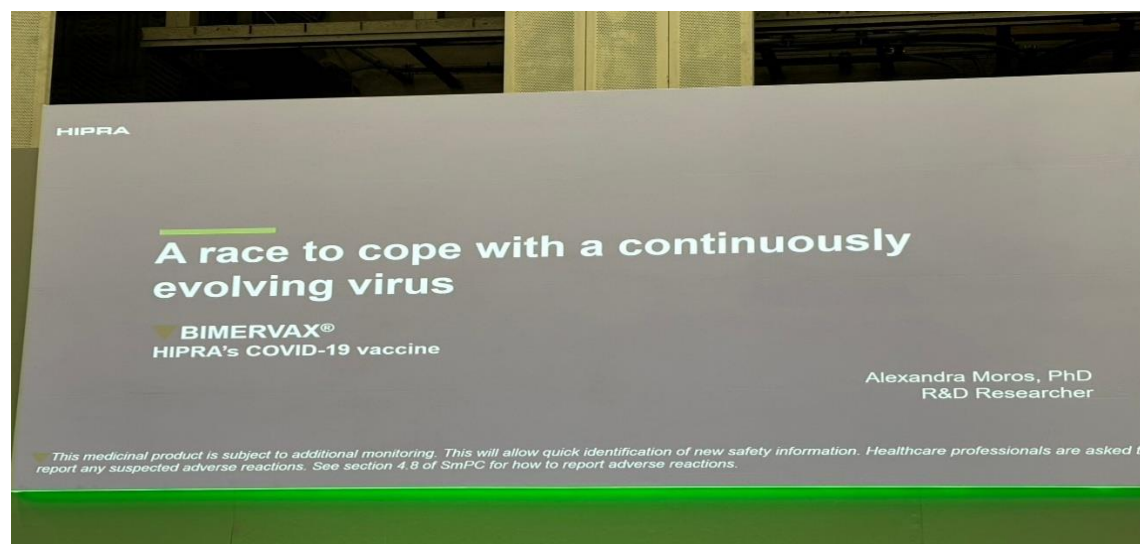
建議

- 一認可疫苗對減少 AMR 的重要性，並將其納入全球和國家行動計畫；
- 二加速現有疫苗的引入並提高接種覆蓋率，特別是兒童和老年人群；
- 三系統性評估新疫苗對 AMR 的影響，並納入政策決策框架；
- 四推動疫苗研發與實施，將 AMR 指標納入臨床試驗與研究重點，從而全面減少 AMR 的健康和經濟負擔。


2. 為提升疫情防範能力，加速疫苗開發與部署(Improving pandemic preparedness to enable rapid vaccine development and deployment: a consortium initiative by CEPI)

CEPI(Coalition for Epidemic Preparedness Innovations)流行病預防創新聯盟聚焦於如何提升全球應對疫情能力，讓疫苗可以更快開發和分發。CEPI 的目標是實現「100 天內完成疫苗開發」，也就是從病原體被發現到疫苗開發可以使用只需要 100 天。為了達到這個目標，成立監管創新團隊幫助簡化和加速疫苗審核的流程，特別是給需要優先保護的高風險族群。CEPI 使用單一平台技術的方式，可以重複用於多種疫苗，讓開發過程更快、更有效率。此外，該組織製作疫情應對手冊裡面收錄了疫苗開發的最佳做法和策略，幫助疫苗開發者和監管機構合作。為了確保疫苗公平分配，提出了「同一份檔案、全球同時使用」的方式，並針對可能的風險，比如審核延遲和生產瓶頸，提出解決方案，確保所有國家都能及時獲得疫苗。

3.如何面對持續演化的病毒 A race to cope with a continuously evolving virus



HIPRA Why the RBD domain of Protein S?



90 % of neutralizing antibodies in convalescent patients¹ and 93 % in those vaccinated with Protein S² vaccines are directed against RBD³.

RBD is a potent and efficient immunogen.⁴

RBD Dimer


- Increased immunogenicity.⁴
- Immunization against two variants in one antigen.

1. Greeney AJ et al. Cell Host Microbe. 2021; 29(3):463-478 e6.
2. Greeney AJ et al. Cell Transl Med. 2021; 3:19509.
3. Brown CE et al. Sci Immunol. 2022; 7(7):eabf1421.
4. Liu W et al. Cold Spring Harb Perspect Biol. 2016; 8(7):a002295


RBD: receptor binding domain

HIPRA PHH-1V: HIPRA bivalent recombinant adjuvanted vaccine

Antigen
Fusion heterodimer of the RBD domains of the SARS-CoV-2 Spike (S) protein of the B.1.351 (Beta) and B.1.1.7 (Alpha) variants into the same molecule.^{1,2}



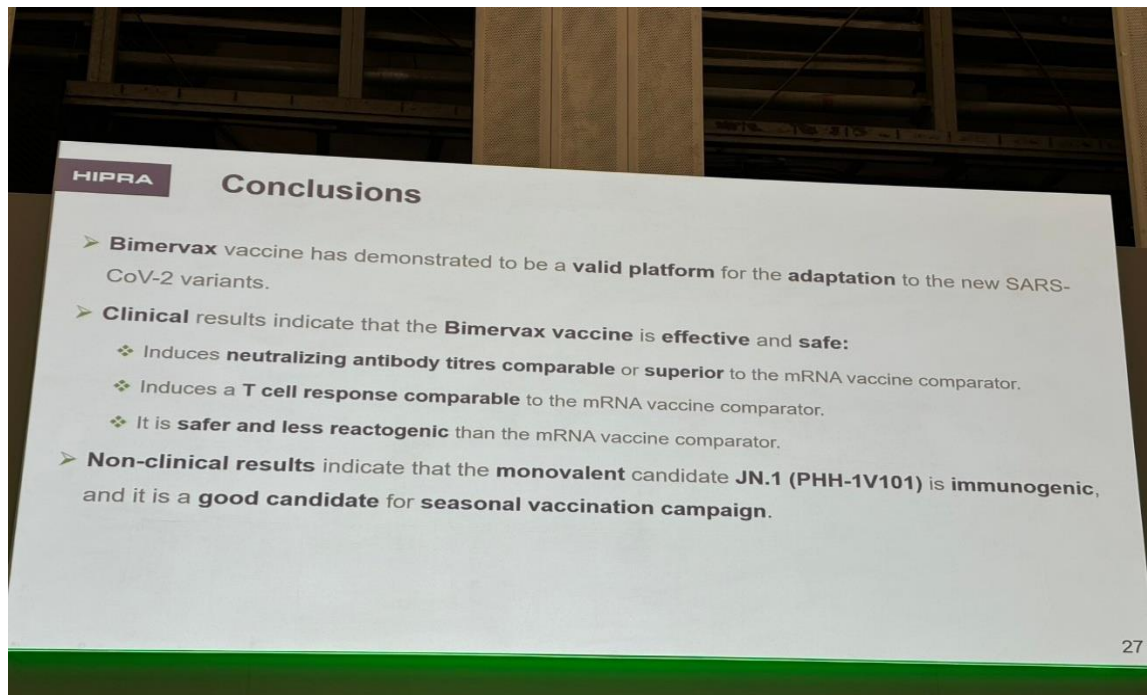
Adjuvant
SQBA (squalene-based adjuvant) is an oleo-aqueous emulsion comprising well-known components used in many human medicines.^{1,2,3}



MERVAX® SmlPC. Available at: https://www.ema.europa.eu/en/documents/product-information/bimervax-0par-product-information_en.pdf
Brenino A et al. iScience. 2023; 26(3):1081262.
Hagan, DT et al. NPJ Vaccines. 2023;1(1):159

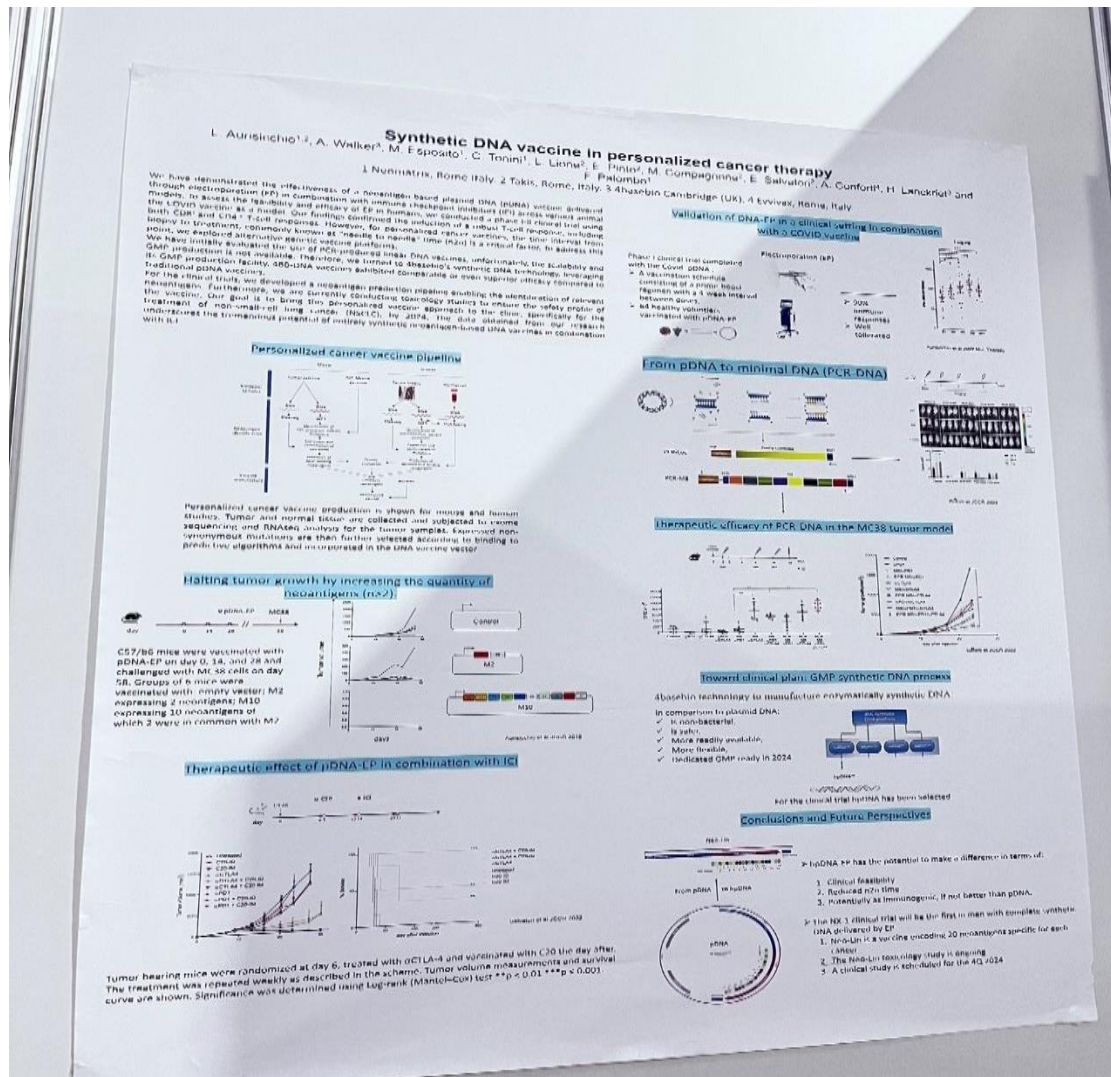
RBD: receptor binding domain

HIPRA BIMERVAX COVID-19 雙價重組蛋白疫苗能快速適應不同 SARS-CoV-2 變異株，可增強免疫反應，並搭配角鯊烯基輔助劑（SQBA）提升免疫效能，提供對多種變異株的保護，已獲得 EMA、UK MHRA 和 WHO 核准。後續推出的 PHH-1V81 (XBB.1.16) 和 PHH-1V101 (JN.1) 也可預防新變異株病毒的感染，預計於 2024-2025 年可以上市使用。新疫苗具備單價與雙價配方，透過異源疫苗接種可聚焦免疫反應，提供長效保護力（可達 365 天），副作用低。此外，該疫苗可在 2-8°C 的冷鏈條件下儲存，無須稀釋，簡化施打流程並提升醫療效率。



臨床試驗證明，該疫苗在中和抗體水平與 T 細胞反應上，表現與 mRNA 疫苗相當或更佳，可能更安全，為未來季節性 COVID-19 疫苗接種提供候選方案。

4. DNA 合成疫苗在個人化癌症治療中的應用



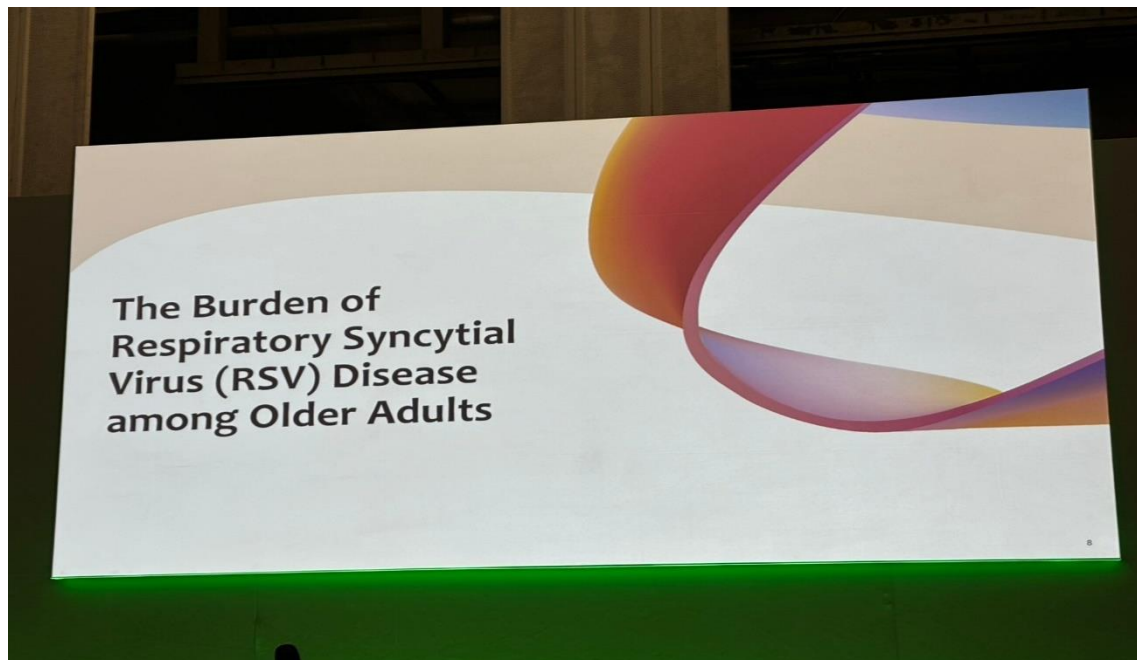
該研究團隊展示新抗原的合成 DNA 疫苗，該疫苗特別對 CD8 T 細胞有強大的免疫反應，對腫瘤產生抑制效果。此外，DNA 疫苗技術已在 COVID-19 疫苗臨床試驗中成功驗證，證明其在臨床應用上的安全性與免疫效果。

動物實驗結果顯示，當 DNA 疫苗設計中包含兩個以上新抗原時，能顯著增強免疫反應並抑制腫瘤生長。該研究團隊將抗腫瘤疫苗與免疫檢查點抑制劑（如 anti-CTLA-4）合用，發現併用療法顯著減緩腫瘤生長並延長存活率。統計結果顯示，治療組與對照組差異顯著，顯示併用療法在臨床應用上的潛力。

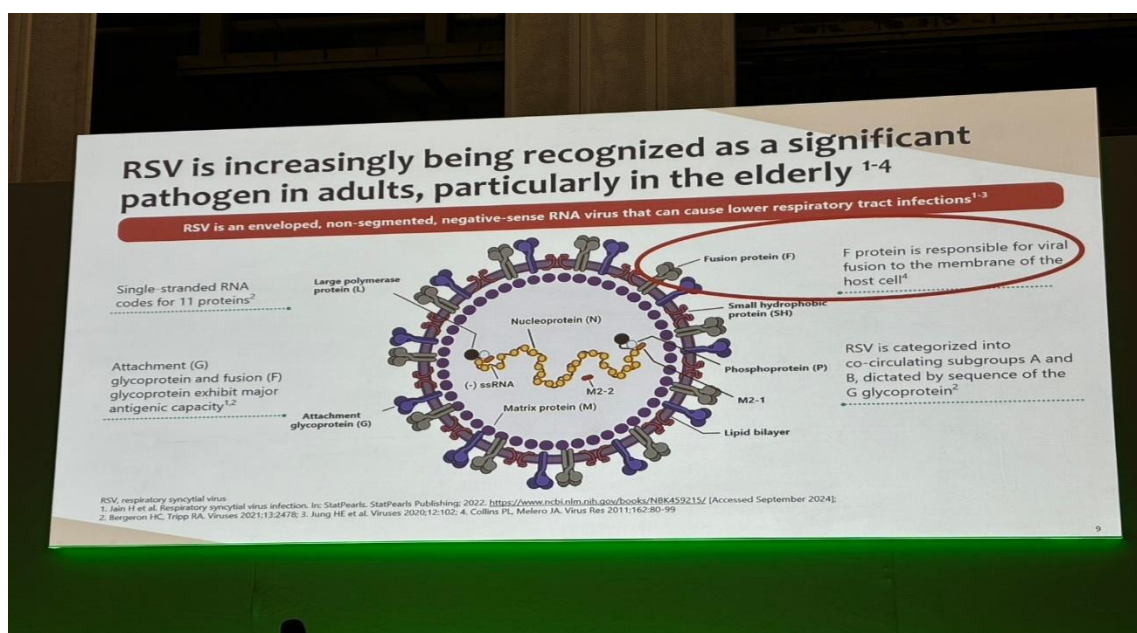
整體而言，該研究表明合成 DNA 疫苗具備臨床可行性，能誘導強大的免疫反應，實現個別化治療。同時，該疫苗與免疫檢查點抑制劑聯用可進一步提升治療效果。未來研究將聚焦人體臨床試驗，完善合成 DNA 疫苗技術，為癌症治療帶來新的希望。

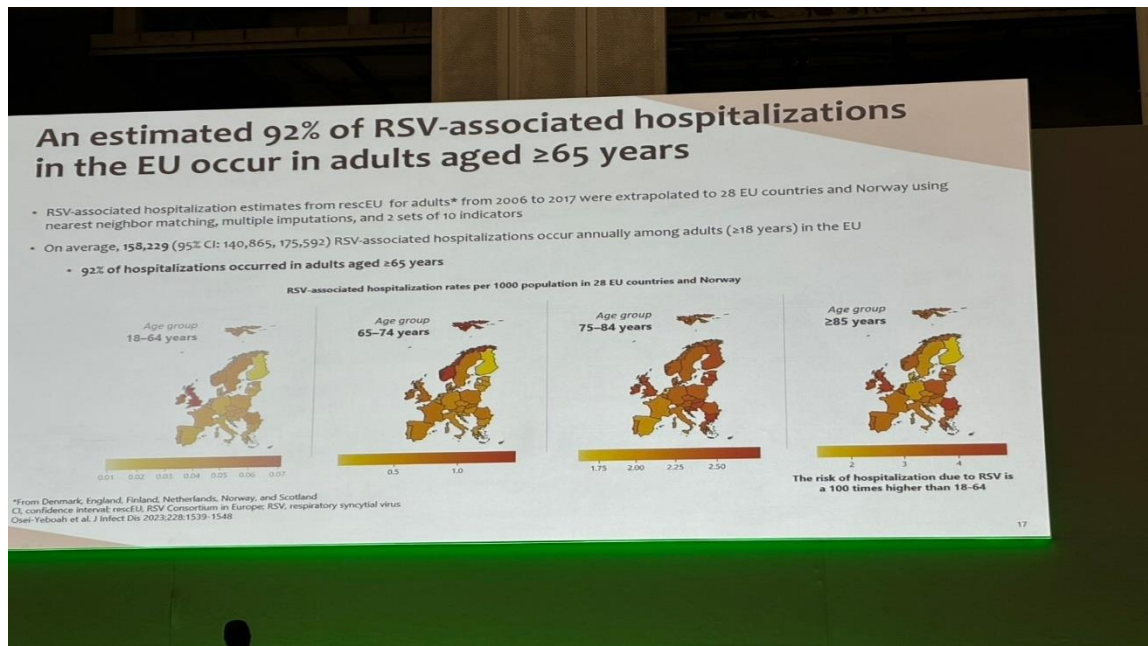
(二)第二天議程:

1. 呼吸道融合病毒(RSV)對老年人的威脅 The Burden of Respiratory Syncytial Virus (RSV) Disease among Older Adults

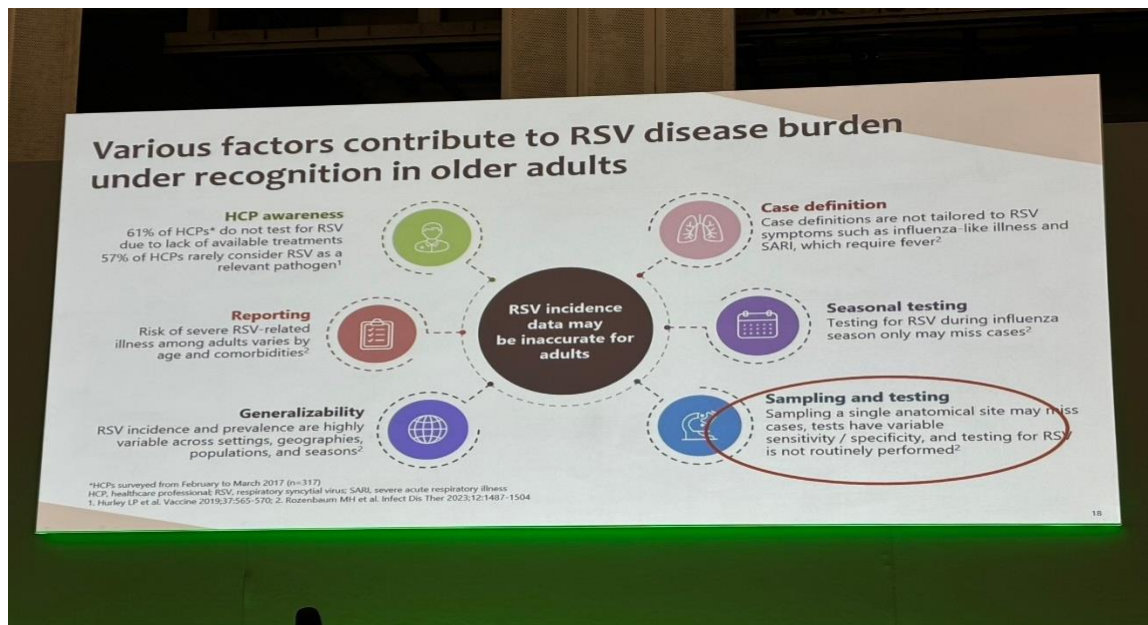


RSV（呼吸道融合病毒）易在老年人中引發嚴重的併發症，與流感和 COVID-19 相比其傳播力更高（ R_0 達 4.5），並且會導致較高的住院率與死亡率。研究顯示，因 RSV 感染後住院的患者，1 年內存活率僅 74.2%，低於流感患者的 81.2%。RSV 常見症狀包括發燒、流鼻水、鼻塞和咳嗽，容易與其他呼吸道病原混淆，臨床診斷困難。此外，RSV 流行於冬季，與流感及 COVID-19 共同對全球醫療系統造成巨大壓力，尤其成人疫苗接種率不足，使問題更為嚴重。

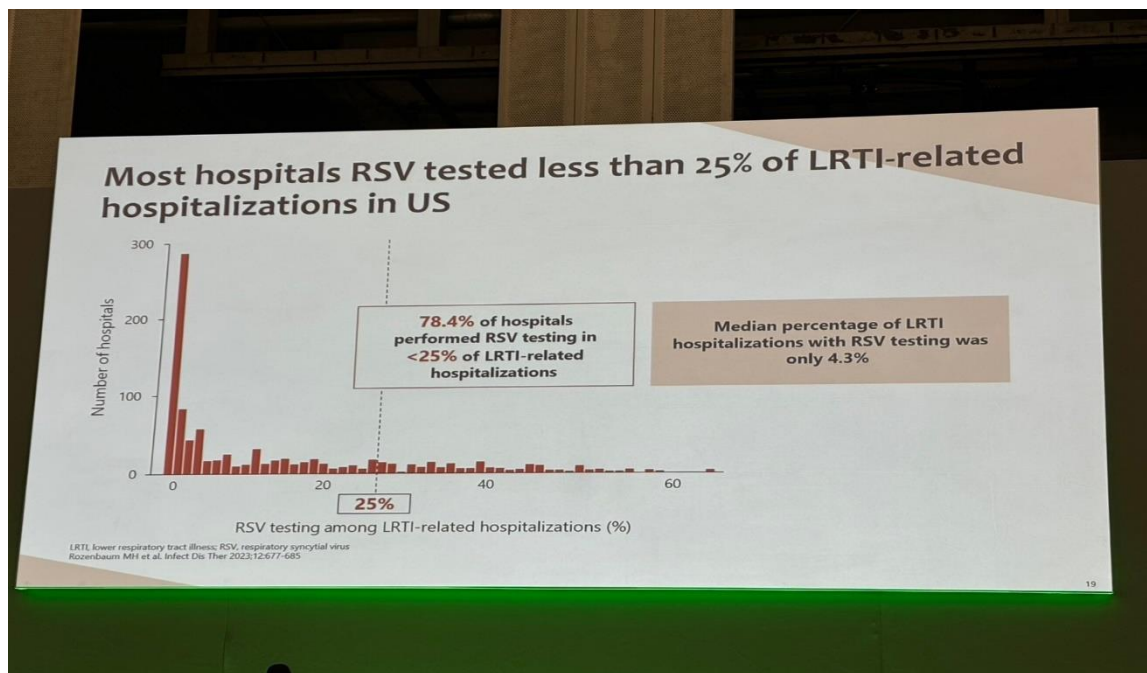




隨著年齡增長，RSV 的發病率與病程嚴重性（如 ICU 住院與死亡）顯著增加，尤其是合併慢性疾病的患者風險更高。RSV 與流感及 COVID-19 同時流行，對醫療系統造成極大壓力，然而目前疫苗接種率仍然不足。為了降低疾病負擔，成人免疫接種是達成健康老齡化的重要策略，強調疫苗接種能有效預防 RSV 感染高峰。



老年人中 RSV 發生率的低估受到多種因素影響，包括醫療專業人員對 RSV 認識不足、僅在流感季節進行測試的限制、採樣與測試敏感性/特異性低，以及 RSV 發病率在不同地區、族群和季節的高度變異性，導致數據準確性受到挑戰。



此外，美國大多數醫院在處理與下呼吸道感染（LRTI）相關的住院患者時，RSV 測試比例極低，超過 78%的醫院僅在低於 25%LRTI 住院病人中進行 RSV 測試，而整體的中位測試比例僅為 4.3%，顯示對 RSV 的測試和診斷仍然非常不足。

Summary

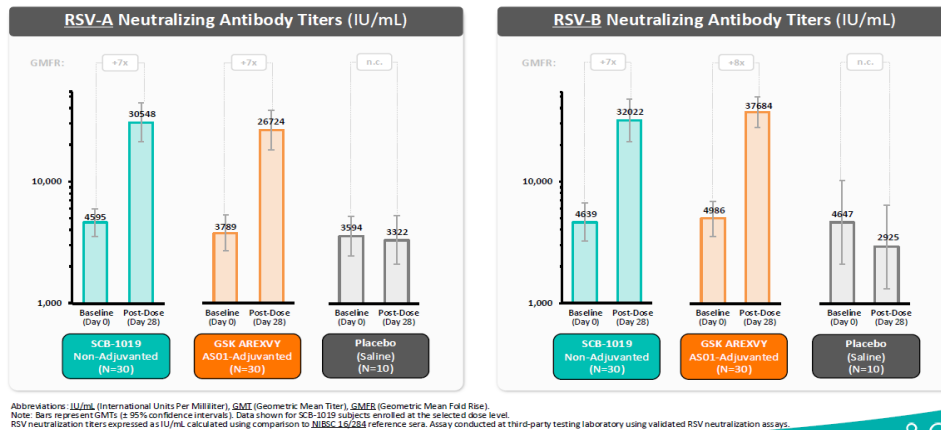
- Adult immunization – important strategy to achieve the UN Healthy Aging goals, SDGs and WHO Immunization Agenda 2030**
RSV represents a crucial opportunity
- RSV is often unrecognized in older adults**
 - There is a need to **point-of-care testing** to better inform disease burden estimates across geographies.
- The risk of co-circulating RSV, influenza, and SARS-CoV-2 places pressure on healthcare systems**
 - RSV is recognized as a vaccine-preventable disease in older adults, but the current uptake of vaccination is suboptimal
 - Year-round vaccination could help prevent peaks in RSV infection in hospitals and the community
- RSV is a cause of severe respiratory illness, similar to other well-recognized viral causes**
 - Incidence increases with age among older adults
 - Comorbidities induce a higher risk
 - High proportion of those hospitalized with RSV have severe outcomes, including ICU admission and death, compared with influenza
- Age is an appropriate risk factor to apply when deciding who will receive RSV vaccination**

ICU, intensive care unit; RSV, respiratory syncytial virus

RSV 是造成老年人嚴重呼吸道疾病的重要原因，其發病率和重症風險隨年齡增長及合併症增加而上升。RSV 疫苗接種是實現健康老化與減輕醫療系統壓力的重要策略，能有效降低住院率和重症風險。然而，目前的疫苗接種率仍有提升空間，各國應結合年齡和風險分層制定接種政策。

Clover SCB-1019 Phase 1: Immunogenicity Results

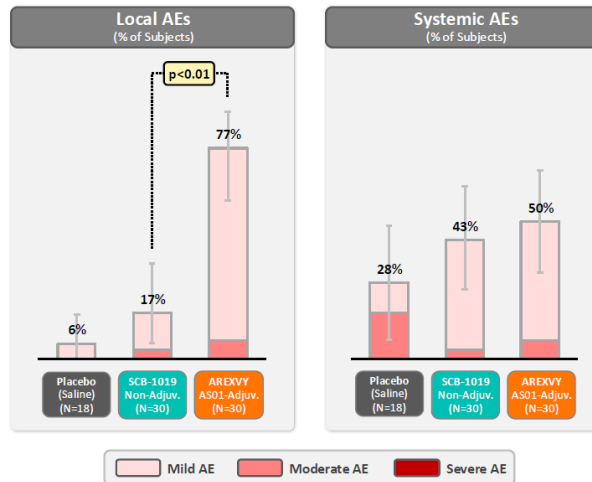
- ✓ RSV Neutralizing Antibody Titers for **Clover's Non-Adjuvanted SCB-1019** Matched **GSK's AS01-Adjuvanted AREXVY** in RSV-Vaccine Naïve Older Adults (Aged 60-85 Years) at 28 Days Post-Vaccination



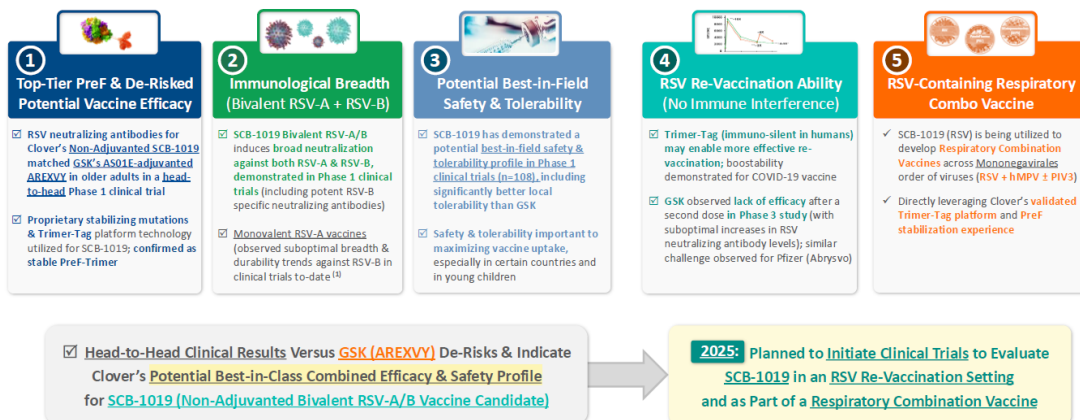
Clover SCB-1019 Phase 1: Safety & Reactogenicity Results

Safety & Reactogenicity Results

- ✓ **Significantly Lower Rates of Local AEs Observed for Clover's non-adjuvanted SCB-1019 (16.7%) Versus GSK's AS01-adjuvanted AREXVY (76.7%)**
- ✓ SCB-1019 Local and Systemic AEs were Generally Mild for SCB-1019 and were Comparable to Saline Placebo
- ✓ No Vaccine Related Serious Adverse Events (SAEs), Adverse Events of Special Interest (AESIs), or AEs Leading to Discontinuation Observed
- ✓ **Potential Best-in-Class Tolerability Profile**



SCB-1019 has a De-Risked & Potential Best-in-Class Combined Efficacy & Safety Profile, with Potential Differentiation to Address Unmet Needs in the Global RSV Vaccine Market (Re-Vaccination & Combo)

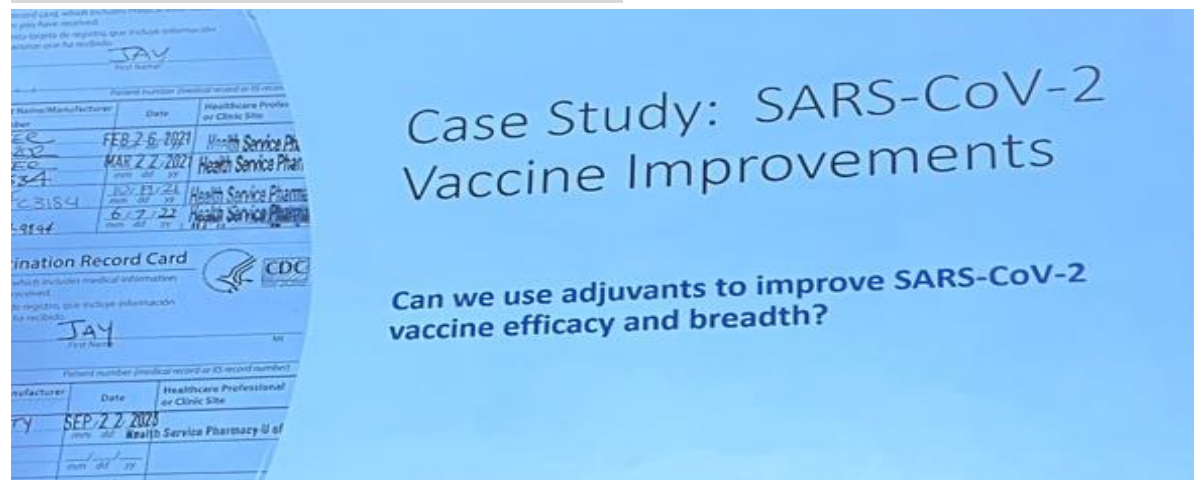


此研究重點放在雙價 RSV（呼吸道融合病毒）候選疫苗 SCB-1019 的 Phase 1 臨床試驗結果，並與其他現有的疫苗（如 GSK 的 AREXVY 疫苗）進行比較，針對 RSV-A 和 RSV-B 兩種主要病毒株，第一階段臨床試驗之免疫原性，接種後 28 天，SCB-

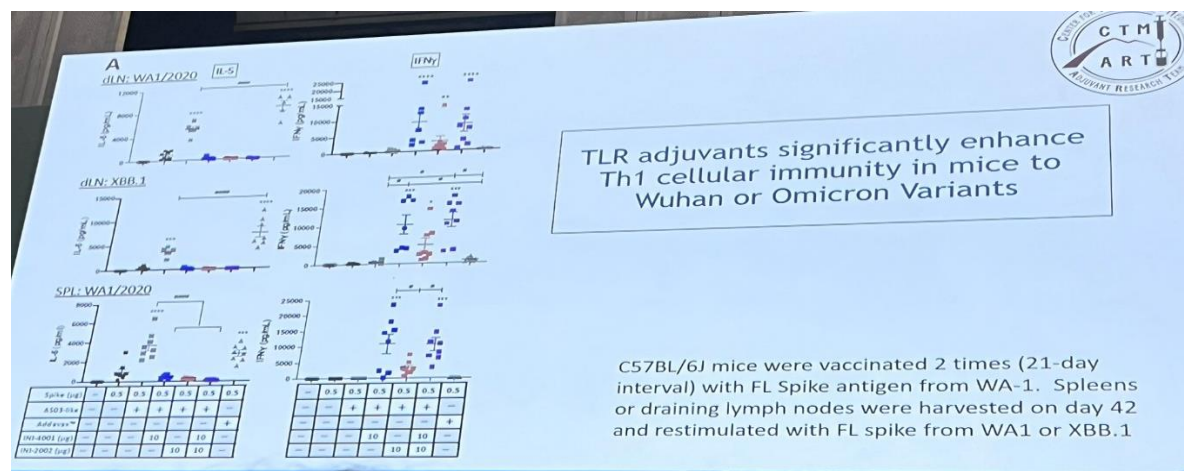
1019 產生的中和抗體水平與 GSK 的 AREXVY 疫苗比較是持平甚至更高，特別是在針對 RSV-B 的抗體生成上有顯著優勢。安全性與耐受性方面，SCB-1019 的局部副作用（如接種部位疼痛）的發生率遠低於 GSK 疫苗（16.7% vs.76.7%），不良反應程度輕微且可比於安慰劑。未來，可能成為老年人及高風險群體的另一個防護工具。

3. COVID-19 及相關議題：探討針對新冠的持續挑戰及疫苗開發更新。

Case Study: SARS-CoV-2 Vaccine Improvements



此研究聚焦於改善 SARS-CoV-2 疫苗，使用佐劑來提升 SARS-CoV-2 疫苗的效力。

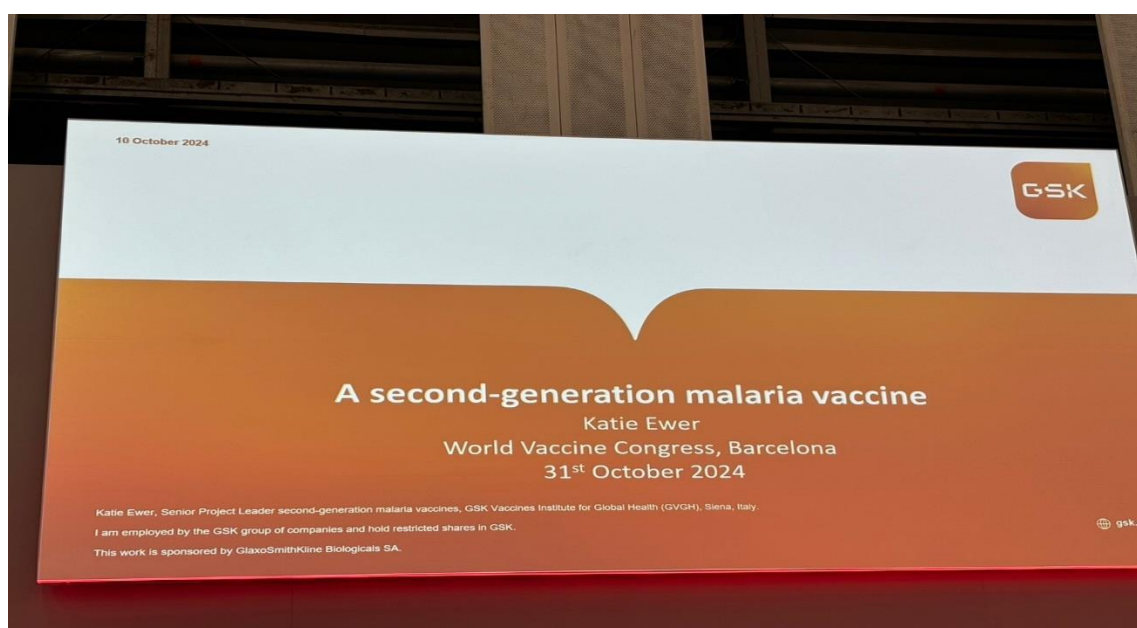


此實驗將小鼠分兩次接種含 WA1 FL Spike 抗原的疫苗，並分別使用原始株和 Omicron (XBB.1) 變異株進行試驗。結果顯示，TLR 佐劑顯著提升免疫反應。數據顯示，使用 TLR 佐劑有助於加強細胞免疫反應，進而提升疫苗對不同變異株的保護力。新型 TLR 佐劑和傳遞系統可提升重組抗原疫苗的免疫反應，並擴展針對季節性變異株的保護範圍。配方類型及新抗原開發均可提高交叉反應性。此外，TLR 佐劑對免疫低下者有效，且具有良好的安全性，疫苗的持久性測試正在進行中。

研究發現，商業佐劑如 **AddaVax** 能有效激活巨噬細胞中的 **NLRP3**，特別是在結合 **TLR4** 和 **TLR7/8** 激時顯示更強的免疫促進作用。然而，老年人的巨噬細胞相較於年輕人顯示出較低的細胞死亡率，反映出老化對免疫反應的特殊調控。這些結果強調，針對老年人的疫苗設計應考慮佐劑的選擇與組合。

總結來說，此研究表明新型佐劑可能改善老年人的免疫反應，未來需多評估疫苗佐劑對不同年齡群體的效果，對未來疫苗開發具有重要意義。


2. 第二代瘧疾疫苗 A second-generation malaria vaccine






GSK 和世界衛生組織（WHO）在對抗瘧疾方面的重要進展，特別是第一代瘧疾疫苗（**Mosquirix**）及其未來第二代疫苗的研究與實施計劃。**Mosquirix** 疫苗已在非洲多國實施接種，覆蓋超過 230 萬名兒童，顯著降低了瘧疾相關的死亡率和重症比例。然而，由於疫苗接種覆蓋率有限（3 劑覆蓋率 65%，4 劑不到 50%），疫苗接種覆蓋仍有進步空間。

Final impact results from Malaria Vaccine Implementation Programme (MVIP)

Across Ghana, Kenya and Malawi over 46 months of implementation



13% (2-22%) reduction in all-cause mortality

22% (4% - 37%) reduction in severe malaria

- Measured in children age-eligible for vaccination
- Population-based estimate: 3-doses vaccine coverage ~65%; 4-dose coverage < 50%
- Observed in areas with good ITN use, good access to care
 - > Potentially even higher impact where preventive and curative services are less reliable
- Shows that high impact can be gained by preventing malaria early when children most vulnerable
- MVIP and RTS,S served as a pathfinder for second and next-generation malaria vaccines

Mayuko PATH-WHO MVIP call, 31 Oct 2023

Overview of the GSK baseline and Phase IV epidemiological studies

Timeline: 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025

Start of Vaccine Implementation (2019)

- EPI-MAL-002 BASELINE** (2017-2019): Incidence rate of meningitis, AESIs, death and malaria (including cerebral malaria)
- EPI-MAL-003 VACCINE USE** (2019-2025): Safety monitoring and effectiveness of RTS,S/AS01
- EPI-MAL-005: Annual survey & EPI-MAL-010: Strain Replacement** (2019-2025):
 - Parasite prevalence and use of malaria control interventions
 - Evaluation of parasite genetic diversity
- MVPE (WHO)** (2021-2025): Safety monitoring and effectiveness of RTS,S/AS01 feasibility of implementation

Legend: IA Interim analysis & report, FA Final analysis & report

GSK ClinicalTrials.gov: NCT02374450; 2020; 1-15 (EPI-MAL-002), ClinicalTrials.gov: NCT03855995; 2021; 1-16 (EPI-MAL-003), ClinicalTrials.gov: NCT02251704; 2020; 1-9 (EPI-MAL-005) (Accessed October 2021)

31 October 2024 3

Why do we need a second-generation vaccine?

- Latest data suggests that progress to reduce malaria cases and deaths remains stalled
- Two malaria vaccines now approved and large-scale deployment will increase in 2024
 - These two vaccines are 60-70% effective over the first year and booster doses are needed
 - Deployment of current vaccines is difficult
 - 3 doses plus boosters outside of routine EPI schedule
 - Cost of Goods and deployment costs are a barrier to maximum coverage
- A BIC second-generation vaccine would help to secure a multi-supplier market for malaria vaccines in the future
 - High probability of WHO recommending a second-generation vaccine that meets PPCs
- Although Mosquirix is already having real-world impact, the burden of malaria remains huge

GSK WHO World Malaria report 2022 WHO Malaria vaccine position paper March 2022, Chandramohan et al NEJM 2021, Cairns BMC Medicine 2022, Schmit et al. <http://dx.doi.org/10.1186/s12916-022-02779-5> The public health impact and cost-effectiveness of the R21 (Matrix-M) malaria vaccine: a mathematical modelling study

現有疫苗有效率第一年僅為 60-70%，保護期較短且需要多次加強劑，限制了預防疾病的效果。第二代疫苗目標是提高效能（12 個月內超過 90%），延長保護期，並降低生產和接種成本。策略包括優化抗原設計，開發多階段抗原，以提升疫苗免疫反應的穩定性與持久性，並採用單瓶多劑量配方來簡化供應鏈。

Improving vaccine efficacy

Addition of a blood-stage antigen: a “multi-stage” approach:

Development of blood-stage component to complement RTS,S

- Highly conserved antigen from blood-stage of malaria
- Many new candidates in development
 - PF PCRCR complex including Rh5, CyRPA and Ripr
 - FI MSP1
 - AMA1
 - SERA5
- Key readout from Ph2b trial of Rh5.1 showed 55% VE
 - Plan to combine with R21 in Phase 2 soon
 - Need PoC for combination of CSP
 - Can antigens be co-administered without interference?
 - Regulatory pathway

PMID: 35395399 Monoclonal antibodies for malaria prevention (nih.gov)

GSK

Dose and schedule

Improved immunogenicity/durability by delaying the third dose in the primary series

- Mosquirix is currently provided as 3 doses given one-month apart starting at five months of age, with booster doses given annually
- Delaying the third dose of Rh5 in a 0,1,6 schedule gave significantly better durability and peak antibody response in UK adults. With R21, delaying the third dose gave higher IgG responses and comparable efficacy in CHMI
- Define optimal schedule for both antigens and improve durability of antibody response compared with the existing 0, 1, 2 regime
- A strategy compatible with existing infant EPI schedules would facilitate deployment
 - E.g. 6, 10 and 14 weeks of age, plus 9 month visit
 - Or 6, 14 and 9 months to reduce no. of doses

UK adults CHIM Rh5.1/AS01

UK adults CHMI R21/MM

11 Minassian, Med, 2021. Reduced blood-stage malaria growth and immune correlates in humans following RH5 vaccination. Daboo, Lancet, 2024. Safety and efficacy of malaria vaccine candidate R21/Matrix-M in African children: a multicentre, doubleblind, randomised, phase 3 trial.

GSK

第二代疫苗將擴展至更廣泛的年齡層，包括 6 至 10 歲的兒童和年輕成人，並評估其在降低寄生蟲傳播和感染率方面的效果。此外，結合型疫苗的開發可能進一步減輕瘧疾的全球負擔。

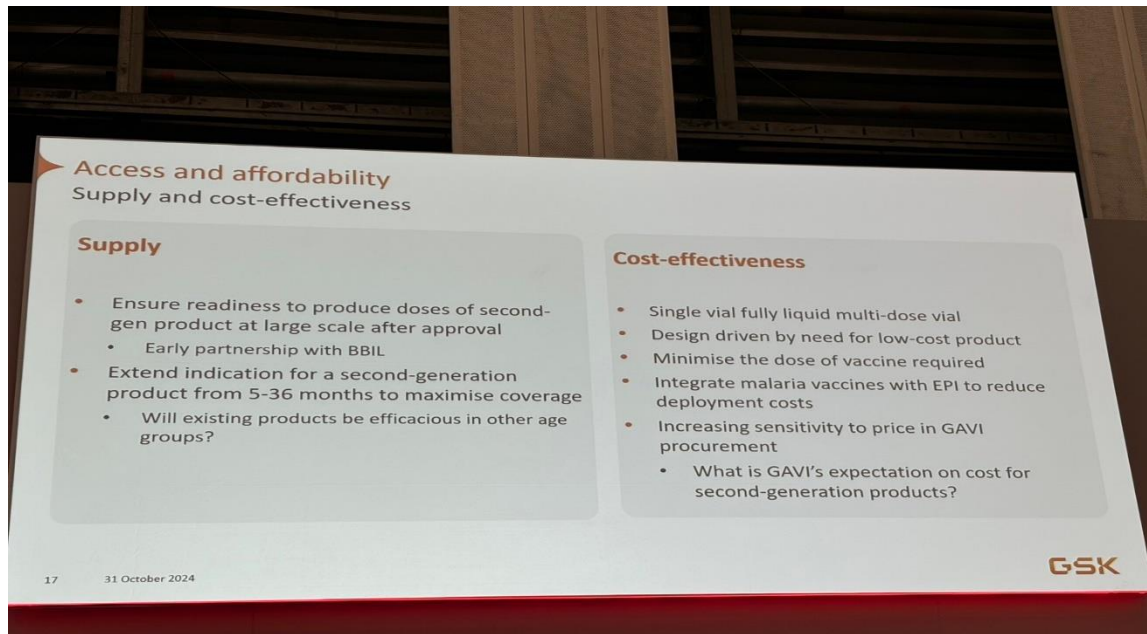
Maximising the impact of second-gen vaccines

Extending uses and indications:

- Could older children (6-10y, young adults) benefit from vaccination?
 - Current vaccines unlikely to protect adults
- Will combination vaccines have an impact on parasite prevalence/transmission by reducing the burden of parasitaemia?
 - How can we measure this?
 - Asymptomatic parasitaemia rates in efficacy studies,
 - Gametocyte carriage,
 - Cross-sectional community surveys, especially in school-age children.
- Data from RTS,S implementation studies will inform this

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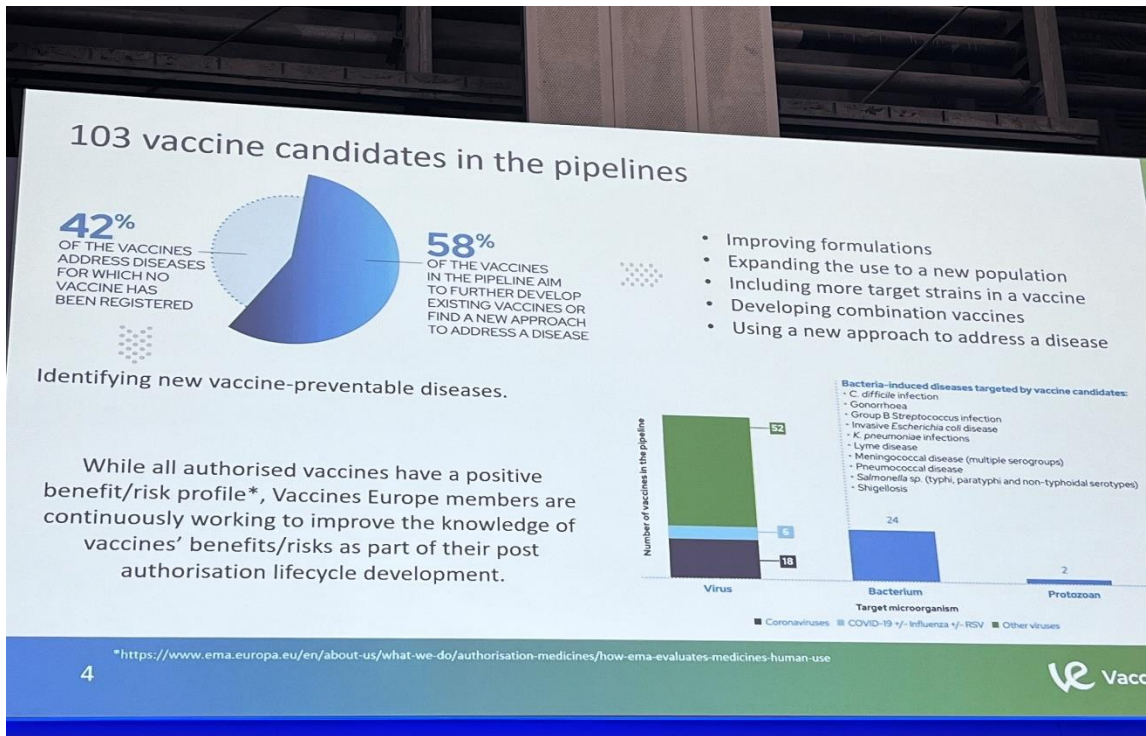
GSK



第二代瘧疾疫苗目的在解決現有疫苗的不足，包括效能、保護期及成本問題，同時開發新的受益群體與更高效率的接種方式。加速開發過程與降低成本是實現廣泛覆蓋的核心目標。

3. Vaccines Europe 最新疫苗研發趨勢及未來研發重點領域



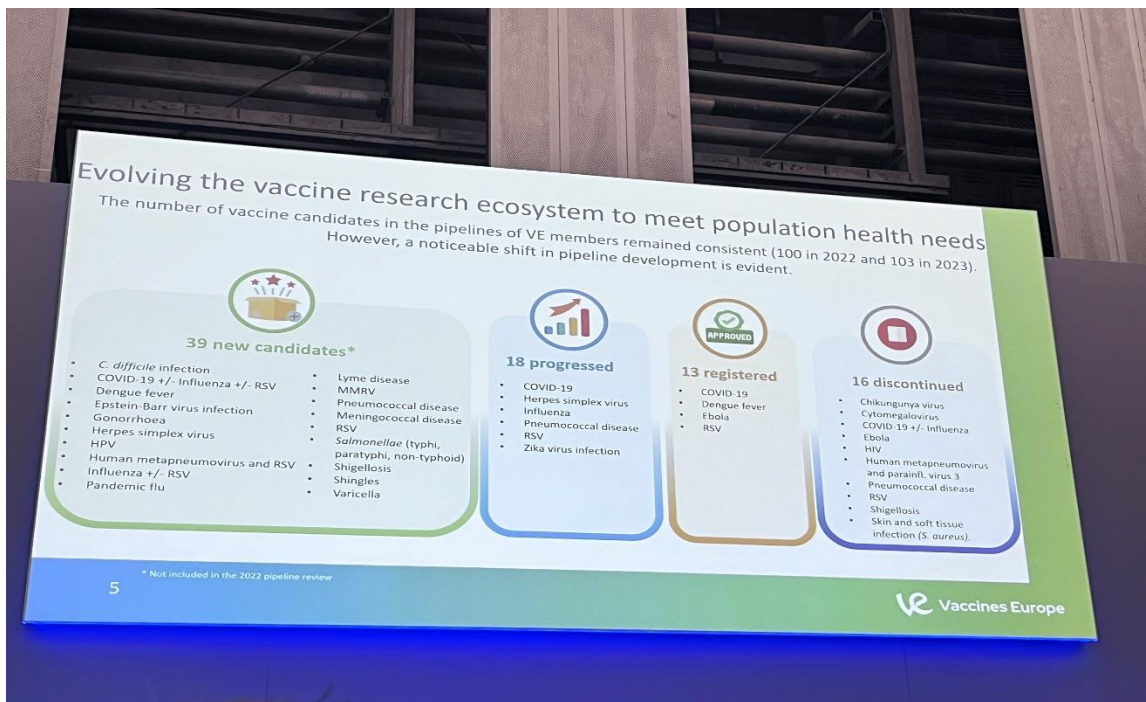


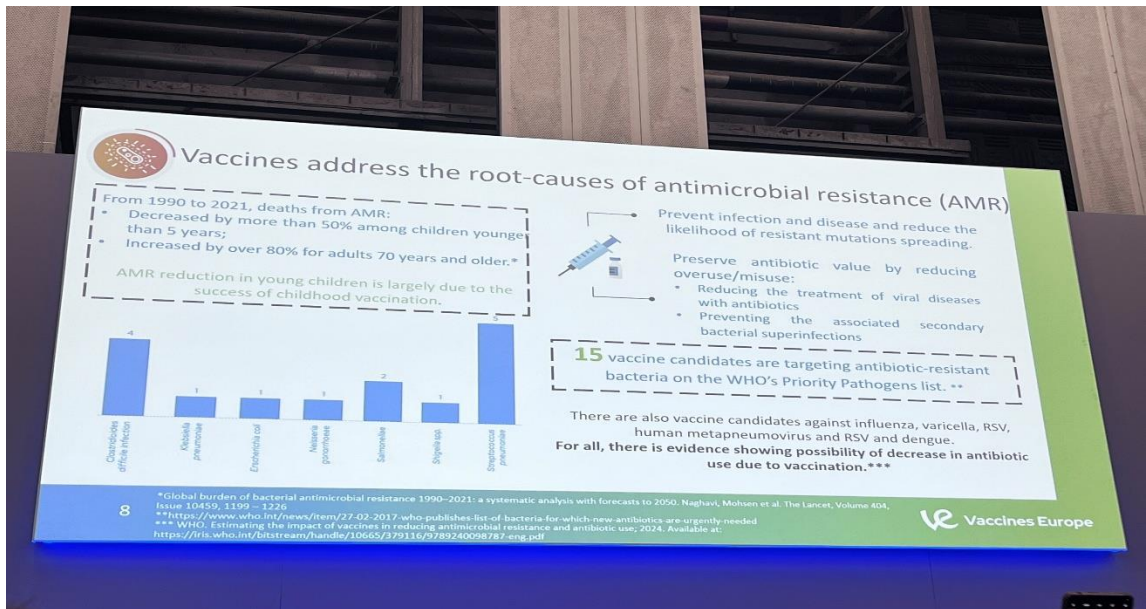
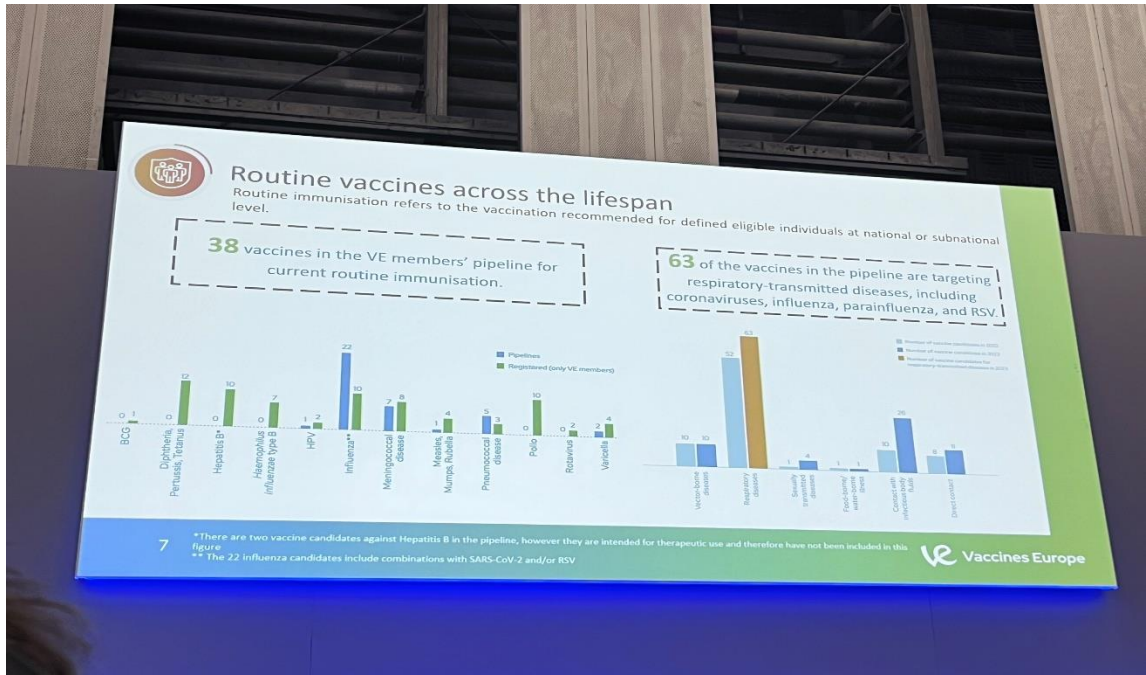
未來疫苗開發針對重點健康問題，包括：

抗生素抗藥性（AMR）：通過預防感染減少抗生素濫用，有 15 個候選疫苗專注於抗生素抗藥性。

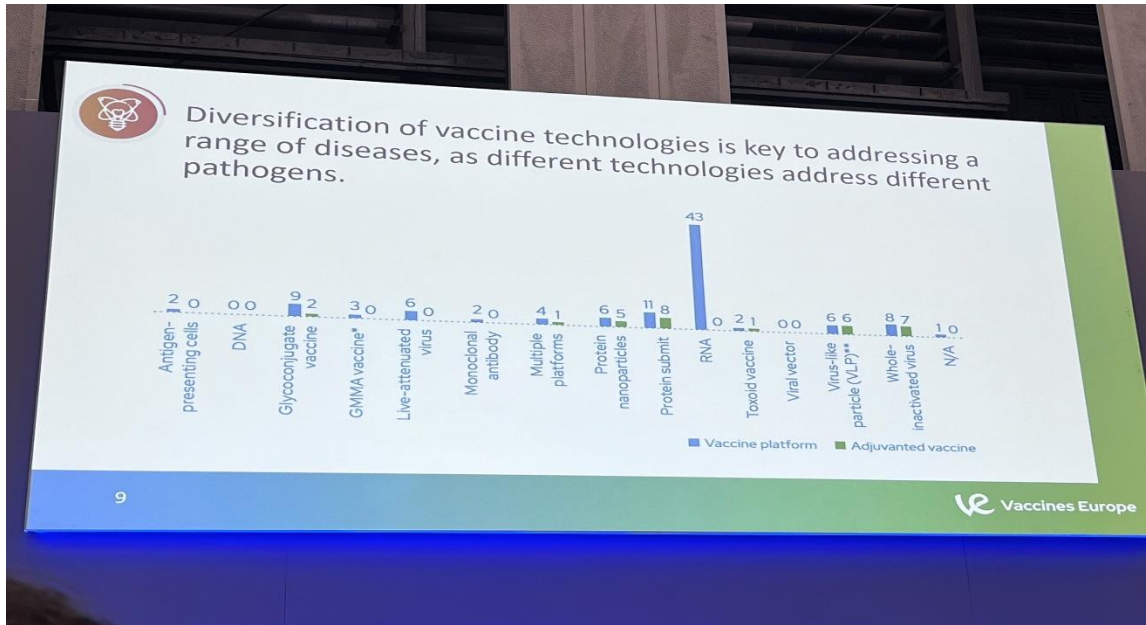
氣候變遷與新興病原體：開發針對瘧疾、登革熱、黃熱病及新型病毒的疫苗。

人畜共患病與疫情準備：如狂犬病和禽流感疫苗。





透過技術多樣化提升疫苗效能與覆蓋率。其研究針對不同年齡群體需求，強調全生命周期免疫的重要性，並通過國際合作與數位化技術推動疫苗開發，致力於改善全球健康並應對未來風險。



疫苗項目聚焦於不同年齡群體的需求，包括兒童、成人及老年人，並探索孕期免疫的新策略。未來的疫苗研發將結合數位化技術和創新平台，以應對人口老化、抗藥性和全球性疫情等挑戰。

心得及建議

本次參加 2024 歐洲世界疫苗大會，深入了解了全球疫苗開發的最新進展及其對公共健康的深遠影響。會議聚焦於新興傳染病、抗生素抗藥性（AMR）、疫情準備及氣候變遷等關鍵議題。根據 Vaccines Europe 的報告，目前全球共有 103 個疫苗候選項目正在開發，其中 42% 專注於尚無疫苗覆蓋的疾病，反映出國際社會對公共健康威脅的高度重視與積極應對。

在會議期間，針對抗生素抗藥性和 COVID-19 疫苗的最新研究進展給我們留下深刻印象。這些領域與我國的公共衛生策略密切相關，特別是歐洲多國透過疫苗研發合作，在抗生素抗藥性及多病原聯合疫苗開發方面取得的重要突破，可為我們提供寶貴的經驗借鑒。建議持續指派負責疫苗業務的承辦人員參與類似的國際疫苗會議，以掌握疫苗研發的最新進展和他國衛生政策動向。這不僅有助於了解歐洲及其他先進國家的疫苗開發趨勢，還可促進國際技術引進與合作。此次大會的參與，不僅加深了我們對全球疫苗研發趨勢的認識，也為未來如何有效應對疫苗可預防傳染病之潛在威脅，提供了重要的啟發。

Agenda at-a-glance

Hyperlinked section headers – click to quickly navigate detailed agenda by topic

Pre-Congress Workshops – Monday 28 th October					
Morning Workshops: 10:00-13:00					
Platform Technologies			Biothreats & Disease X		
Lunch & Networking Break: 13:00-14:00					
Afternoon Workshops: 14:00-17:00					
Mucosal & Alternative Delivery			Vaccine Equity		
Day 1 – Tuesday 29 th October					
Morning Keynotes: 09:00-10:40					
Expo & Networking Break: 10:40-11:10					
Working Groups: 11:10-12:10					
Expo & Networking Break: 12:10-13:40			Start-Up Pitches: 12:20-13:10		
			Poster Presentations: 13:10-13:40		
Track Presentations: 13:40-15:10					
Technology Showcases	COVID & Beyond	Formulation & Bioprocess	AMR & Bacterial Vaccines	Pre-Clinical Development	Immune Profiling
Expo & Networking Break: 15:10-15:40					
Track Presentations: 15:40-16:55					
Technology Showcases	COVID & Beyond	Formulation & Bioprocess	AMR & Bacterial Vaccines	Pre-Clinical Development	Immune Profiling
Comfort Break: 16:55-17:10					
Closing Keynote: 17:10-18:00					
Offsite Networking, terrace of the Museu Nacional d'Art de Catalunya: 18:45					
Day 2 – Wednesday 30 th October					
Morning Keynotes: 09:00-10:40					
Expo & Networking Break: 10:40-11:10					
Track Presentations: 11:10-12:40					
Clinical Trials	One Health & Veterinary	Respiratory	Emerging & Infectious Disease	AMR & Bacterial Vaccines	Bioprocess & Manufacturing
Expo & Networking Break: 12:40-14:10			Working Groups: 13:00-14:00		Start-Up Pitches: 13:00-13:40
			Poster Presentations: 13:40-14:10		
Track Presentations: 14:10-16:40					
Clinical Trials	One Health & Veterinary	Respiratory	Emerging & Infectious Disease	AMR & Bacterial Vaccines	Bioprocess & Manufacturing
Expo & Networking Break: 16:40-17:10					
Closing Keynote: 17:10-18:00					
Exhibition Networking Drinks: 18:00					
Day 3 – Thursday 31 st October					
Expo & Networking Break: 09:00-09:30					
Track Presentations: 09:30-11:30					
Manufacturing Technologies	Partnerships & Access	Supply & Logistics	Cancer & Therapeutic	NDs & Global Health	Clinical Trials
Expo & Networking Break: 11:30-12:30					
Track Presentations: 12:30-14:45					
Manufacturing Technologies	Partnerships & Access	Supply & Logistics	Cancer & Therapeutic	NDs & Global Health	Clinical Trials
Comfort Break: 14:45-15:00					
Closing Keynote: 15:00-16:00					
END OF CONGRESS					

DAY 1 – Tuesday 29th October

Fira de Barcelona, Montjuic

<u>Agenda-At-A-Glance</u>	<u>KEYNOTES</u>
Registration Opens: 07:45	
<u>Morning Keynotes: 09:00-10:40</u>	
<p>Strengthening Global Preparedness and Building Resilient Health Systems: Meeting Pandemic and Epidemic Demands</p> <p>Strategies for Achieving Global Immunization Equity: How Soon Can We Make It a Reality?</p>	
Expo & Networking Break: 10:40-11:10	
<u>Working Groups: 11:10-12:10</u>	
<p>Expo & Networking Break: 12:10-13:40</p> <p>Join us in the exhibition hall for:</p> <p>1-2-1 partnering, refreshments, start-up pitches & poster sessions</p>	<p><u>Start-Up Pitches: 12:20-13:10</u></p> <p><i>Theatre 1</i></p>
	<p>Poster Presentations: 13:10-13:40</p> <p><i>Poster Zone, Exhibition Floor</i></p>
Track Presentations: 13:40-15:10	
<p><u>Technology Showcases</u></p> <p><i>Theatre 2</i></p>	<p><u>COVID & Beyond</u></p> <p><i>Theatre 3</i></p>
<p><u>Formulation & Bioprocess</u></p> <p><i>Theatre 1</i></p>	<p><u>AMR & Bacterial Vaccines</u></p> <p><i>Theatre 4</i></p>
	<p><u>Pre-Clinical Development</u></p> <p><i>Theatre 5</i></p>
	<p><u>Immune Profiling</u></p> <p><i>Theatre 6</i></p>
Expo & Networking Break: 15:10-15:40	
Track Presentations: 15:40-16:55	
<p><u>Technology Showcases</u></p> <p><i>Theatre 2</i></p>	<p><u>COVID & Beyond</u></p> <p><i>Theatre 3</i></p>
<p><u>Formulation & Bioprocess</u></p> <p><i>Theatre 1</i></p>	<p><u>AMR & Bacterial Vaccines</u></p> <p><i>Theatre 4</i></p>
	<p><u>Pre-Clinical Development</u></p> <p><i>Theatre 5</i></p>
	<p><u>Immune Profiling</u></p> <p><i>Theatre 6</i></p>
Comfort Break: 16:55-17:10	
<u>Closing Keynote: 17:10-18:00</u>	
Can uptake keep up with the speed of vaccine developments?	

DAY 1 – Tuesday 29th October

Fira de Barcelona, Montjuic

<u>Agenda-At-A-Glance</u>		<u>KEYNOTES</u>			
<u>Technology Showcases</u>	<u>COVID & Beyond</u>	<u>Formulation & Bioprocess</u>	<u>AMR & Bacterial Vaccines</u>	<u>Pre-Clinical Development</u>	<u>Immune Profiling</u>
Technology Showcases					
<i>Theatre 2</i>					
Chair: Prof Jonathan Heeney, Professor, Comparative Pathology, Head, Laboratory of Viral Zoonotics, University of Cambridge, CEO, DIOSynVax					
13:40	New tricks for 190 kb of genomic DNA in the cytoplasm: MVA as a viral vector for Personalized Vaccines and Pandemic Response <i>Dr. Volker Sandig, CSO, ProBioGen AG.</i>				
13:55	Accelerating Multivalent Mrna Vaccine Development: Rapid Construct Characterization & Protein Expression Analysis With Vaxarray® <i>Senior Representative, Biomérieux</i>				
14:10	Capturing high quality immunoassay data- case studies using Certimmune <i>Dr Andrea Tattersall, Director, Lab Operation, Revvity</i>				
14:25	Navigating The Future of Vaccine Manufacturing with Molecular Devices <i>Dr Kristyna Sala, Applications Scientist for Imaging & BioPharma, Molecular Devices</i>				
14:40	Development Of A Safe And Effective Ebola Vaccine – Title TBC <i>Senior Representative, Invitria</i>				
14:55	A scalable cell-free protein production technology accelerating vaccine development <i>Dr Ricarda Finnm, Chief Scientific Officer, Leniobio GmbH</i>				
15:10-15:40 - Afternoon Expo & Networking Break					
15:40	NEO1 Intranasal Adjuvant: Phase 1 H5N1 Influenza Immunogenicity and Safety Results <i>Dr Chad Costley, CEO & President, Blue Willow Biologics</i>				
15:55					
16:10	AI-designed vaccine based on mRNA technology that protects against a broad range of betacoronaviruses				
16:25	<i>Dr Kaïdre Bendjama, CSO, NEC Oncolmmunity AS</i>				
16:40	The Future of Injectables: A Vaccine through BFS Manufacturing is Possible <i>PJ Kim, Vice President of Business Development, Apiject</i>				
16:55	END OF TRACK				
<u>Workshops</u>		<u>DAY 1</u>	<u>DAY 2</u>	<u>DAY 3</u>	

DAY 1 – Tuesday 29th October

Fira de Barcelona, Montjuic

<u>Agenda-At-A-Glance</u>		<u>KEYNOTES</u>			
<u>Technology Showcases</u>	<u>COVID & Beyond</u>	<u>Formulation & Bioprocess</u>	<u>AMR & Bacterial Vaccines</u>	<u>Pre-Clinical Development</u>	<u>Immune Profiling</u>
COVID & BEYOND					
<i>Theatre 3</i>					
<i>Sponsored by BioNTech</i>					
Chair: Dr Jerry Sadoff, CMO, Centivax - TBC					
13:40	Capillary Devices for Sample Collection in Decentralized Vaccine Studies				
13:55	<i>Kelli Aufderheide, Director, Decentralized Trial Laboratory Solutions, Q² Solutions</i>				
14:10	Optimized Prime: A Transformative RNA-LNP Vaccine Composition that Scales				
14:25	<i>Dr Martin Rabel, Services Solution Specialist, Cytiva</i>				
14:40	COVID-19 protein vaccines: A race to cope with a continuous evolving virus				
14:55	<i>Dr Alexandra Moros, Project Leader & Researcher in R&D, Human Health Division, HIPRA</i>				
15:10-15:40 - Afternoon Expo & Networking Break					
15:40	Title TBC <i>Senior Representative, Croda</i>				
15:55	Oral Covid Vaccine - Clinical Update from phase 1 to phase 2B <i>Dr James Cummings, Chief Medical Officer, Vaxart</i>				
16:10	Panel: Outstanding questions about long COVID				
16:25	Moderator: <i>Dr Walter Straus, VP, Clinical Safety, Moderna</i>				
16:40	<i>Dr Sultan Abduljawad, Global Scientific Affairs Advisor, BioNTech</i> <i>Stefan Schreck, Head Of Unit, Health Programme And Chronic Diseases, European Commission</i>				
16:55	END OF TRACK				
<u>Workshops</u>		<u>DAY 1</u>	<u>DAY 2</u>	<u>DAY 3</u>	

DAY 1 – Tuesday 29th October

Fira de Barcelona, Montjuic

Agenda-At-A-Glance		KEYNOTES				
Technology Showcases	COVID & Beyond	Formulation & Bioprocess	AMR & Bacterial Vaccines	Pre-Clinical Development	Immune Profiling	
AMR & Bacterial Vaccines						
<i>Theatre 4</i>						
Chair: Dr Jan Poolman, Former Head Bacterial Vaccine Discovery and Early Development, Johnson & Johnson						
13:40	WHO Full Value of Vaccines Study					
13:55	Dr Mateusz Hasso-Agopsowicz, Technical Officer & Project Manager, Vaccine Product & Delivery Research Immunization, Vaccines and Biologicals (IVB), WHO					
14:10	Panel: Demonstrating value and introducing 'vaccines against AMR' into policy framework					
14:25	- How are we considering the evidence of the value of vaccines against AMR in vaccine recommendations?					
14:40	- What additional evidence is needed to inform policy and regulatory changes?					
14:55	- The impact of viral vaccines on antibiotic usage and AMR incidence, how are we measuring this?					
Moderator: Dr Jan Poolman, Former Head Bacterial Vaccine Discovery and Early Development, Johnson & Johnson						
Dr Rino Rappuoli, Scientific Director, Fondazione Biotechnopolo di Siena						
Charlotte Vernhes, Director, Scientific and Medical Affairs, Vaccines Europe, EFPIA						
Dr Collin Brown, Deputy Director of Clinical & Emerging Infections, UKHSA – TBC						
Ivo Claassen, Head of Veterinary Medicines Division, EMA // Dr Marco Cavaleri, Head of Biological Health Threats and Vaccines Strategy, EMA – TBC						
Dr Richard Alm, CSO, Carb-X – invited						
15:10-15:40 - Afternoon Expo & Networking Break						
15:40	The African Genome: Crafting Vaccines for a Diverse Continent					
	Justin Devine, Co-Founder and Chief Innovation Officer, Synexa Life Sciences					
15:55	Panel: Vaccines as an alternative to antimicrobials in animals					
16:10	- Current landscape of antimicrobial use in animals					
16:25	- What are our alternatives: Vaccines, Phages, etc.					
16:40	- Can vaccination be a cost-effective solution?					
	- Financing models and incentives to develop and use alternatives to antimicrobials					
	- How to encourage the use of alternatives to antibiotics in livestock and aquaculture?					
Moderator: Dr Jan Poolman, Former Head Bacterial Vaccine Discovery and Early Development, Johnson & Johnson						
Dr Holy Akwar, Deputy Head of AMR & VP, WOAHA						
Dr David Farcas, Project Director, Yelcho						
Prof Eric Fevre, Chair of Veterinary Infectious Diseases, The University of Liverpool						
Dr Jeremy Salt, CEO, The Vaccine Group						
16:55	END OF TRACK				CONT: AMR DAY 2	
Workshops		DAY 1		DAY 3		

DAY 1 – Tuesday 29th October

Fira de Barcelona, Montjuic

Agenda-At-A-Glance		KEYNOTES				
Technology Showcases	COVID & Beyond	Formulation & Bioprocess	AMR & Bacterial Vaccines	Pre-Clinical Development	Immune Profiling	
Immune Profiling						
<i>Theatre 6</i>						
Chair: Dr Galit Alter, VP of Immunology Research, Moderna						
13:40	Correlates of protection in the CoV002 trial of ChAdOx1.nCOV19 (Vaxzevria): A Systems Serology analysis					
13:55	Dr Lenny Moise, VP Research, SeromYx Systems					
14:10	Characterizing vaccine-induced immune responses with ELISpot and FluoroSpot assays					
	Dr Tyler Sandberg, Product Manager, Mabtech					
14:25	How Luminex's xMAP INTELLIFLEX will boost your vaccine development					
	Senior Representative, Luminex Corporation, A DiaSorin Company					
14:40	Vaccine responses in the elderly population					
	Dr Francesco Berlanda Scorza, VP, Global Health R&D Vaccines Head and GVGH Institute Director, GSK - TBC					
14:55	The Importance Of Adjuvants In Improving Vaccine Responses In Elderly And Immunocompromised					
	Dr Margherita Coccia, Director, Adjuvant Science and Technology, GSK					
15:10-15:40 - Afternoon Expo & Networking Break						
15:40	AI enabled immune-profiling to quantify and track vaccine efficacy. Generative AI for accelerated vaccine development					
15:55	Dr Holger Heyn, Co-Founder & CSO, Omniscope					
	Dr Christian Brander, ICREA Senior Research Professor, IrsiCaixa & Omniscope					
16:10	Combining Microneedle Patch Delivery with the Shigella flexneri 2a GMMMA vaccine					
	Dr Jae Myun Lee, Head Professor and Chair of Microbiology & Immunology, Yonsei University, College of Medicine, & Scientific Advisor, QuadMedicine Inc.					
16:25	Antigens Derived From Microorganisms Showing Molecular Mimicry Of Tumor Associated Antigens					
	Dr Luigi Buonaguro, PI, Istituto Nazionale Tumori Pascale					
16:40	Human in vitro modeling for age-specific adjuvanted vaccine discovery and development					
	Dr Ofer Levy, Director, Precision Vaccines Program, Division of Infectious Diseases, Boston Children's Hospital, Professor, Harvard Medical School					
16:55	END OF TRACK				DAY 3	
Workshops		DAY 1		DAY 2		

DAY 2 – Wednesday 30th October

Fira de Barcelona, Montjuic

Agenda-At-A-Glance			KEYNOTES		
Registration Opens: 08:00					
<u>Morning Keynotes: 09:00-10:40</u>					
Turning Target To Treatment: What Is The Pathway From A Priority Pathogen List To Vaccines? From Zika To Zoonotic A: Anticipating And Combating Climate-Accelerated Infectious Diseases					
Expo & Networking Break: 10:40-11:10					
Track Presentations: 11:10-12:40					
Clinical Trials <i>Theatre 5</i>	One Health & Veterinary <i>Theatre 6</i>	Respiratory <i>Theatre 3</i>	Emerging & Infectious Diseases <i>Theatre 2</i>	AMR & Bacterial Vaccines <i>Theatre 4</i>	Bioprocess & Manufacturing <i>Theatre 5</i>
Expo & Networking Break: 12:40-14:10 Join us in the exhibition hall for: 1-2-1 partnering, refreshments, start-up pitches & poster sessions			Working Groups: 13:00-14:00 <i>See room allocations below</i>		
			Start-Up Pitches: 13:00-13:40 <i>Theatre 1</i>		
			Poster Presentations: 13:40-14:10 <i>Poster Zone, Exhibition Floor</i>		
Track Presentations: 14:10-16:40					
Clinical Trials <i>Theatre 5</i>	One Health & Veterinary <i>Theatre 6</i>	Respiratory <i>Theatre 3</i>	Emerging & Infectious Diseases <i>Theatre 2</i>	AMR & Bacterial Vaccines <i>Theatre 4</i>	Bioprocess & Manufacturing <i>Theatre 1</i>
Expo & Networking Break: 16:40-17:10					
<u>Closing Keynote: 17:10-18:00</u>					
The Evolving Definition of Protection: Progress and Prospects in Therapeutic Vaccines & Immune Modulation					

DAY 2 – Wednesday 30th October

Fira de Barcelona, Montjuic

<u>Agenda-At-A-Glance</u>		<u>KEYNOTES</u>			
<u>Clinical Trials</u>	<u>One Health & Veterinary</u>	<u>Respiratory</u>	<u>Emerging & Infectious Diseases</u>	<u>AMR & Bacterial Vaccines</u>	<u>Bioprocess & Manufacturing</u>
Respiratory					
Theatre 3					
Chair: Dr Bassam Hallis, Deputy Director, Vaccine Development & Evaluation Centre, UKHSA					
11:10	Baseline biomarkers of immunogenicity & reactogenicity to influenza vaccine in over 65s – Title TBC				
11:25	Dr Ali Harandi, Head, Vaccine Evaluation Research Lab, University of Gothenburg & Visiting Associate Professor, Vaccine Evaluation Center, The University of British Columbia				
11:40	Challenges of universal flu & coronavirus vaccines				
11:55	Dr Jay Evans, Chief Scientific & Strategy Officer, Inimmune & Director, Center for Translational Medicine, University of Montana				
12:10	Preclinical and clinical evaluation of a novel RSV B-based prefusion stabilized F protein vaccine candidate Dr Roland Zahn, Senior Scientific Director, Head of Translational & Pre-Clinical Immunology – Viral Vaccines, Johnson & Johnson				
12:25	Clinical update of OVX836, a novel Universal Type A influenza vaccine candidate – Title TBC Dr Alexandre Le Vert, Chief Executive Officer, Osivax				
12:40-14:10 - Lunch Expo & Networking Break					
14:10	New advances in respiratory virus challenge models improving their value for vaccine efficacy testing and host response disease monitoring				
14:25	Dr Andrew Catchpole, CSO, hVIVO				
14:40	Potent And Differentiated Bivalent RSV Vaccine In Older Adults Dr Nicolas Burdin, Global Head of R&D, Clover Biopharmaceuticals				
14:55	Vaccination in pregnancy: use in RSV & COVID Dr Jenny Hendriks, Head Biomarkers Viral Vaccines and Ad Interim Head Clinical Immunology, Janssen Vaccine and Prevention BV				
15:10	MSD RSV Clinical Programme Updates				
15:25	Dr Andrea Guerra, Regional Clinical Director, Vaccines, MSD Prof Heather Zar, Professor & Head, Department of Paediatrics and Child Health & Director, School of Child and Adolescent Health, University of Cape Town (UCT)				
15:40	Update on Novavax Investigational Influenza vaccine and COVID-19-INFLUENZA Combination Vaccine Development Dr Vivek Shinde, VP, Clinical Development, Novavax				
15:55	Metavac®-RSV: in vivo Proof of Concept of first Intranasal vaccine against RSV and HMPV Denis Cavert, CEO, Vaxxel				
16:10	Where are we with adult respiratory combination vaccines?				
16:25	Dr Helen Nicholls, Director, Medical Monitor, Vaccine Clinical Research and Development, Pfizer				
16:40	END OF TRACK				
<u>Workshops</u>		<u>DAY 1</u>	<u>DAY 2</u>	<u>DAY 3</u>	

DAY 2 – Wednesday 30th October

Fira de Barcelona, Montjuïc

<u>Agenda-At-A-Glance</u>			<u>KEYNOTES</u>		
Clinical Trials	One Health & Veterinary	Respiratory	Emerging & Infectious Diseases	AMR & Bacterial Vaccines	Bioprocess & Manufacturing
Emerging & Infectious Diseases					
<i>Theatre 2</i>					
Chair: Dr Swati Gupta, Vice President, Head of Emerging Infectious Diseases and Scientific Strategy, IAVI					
11:10	Advancements in Human Metapneumovirus (hMPV) Vaccine Research Dr Marta Murreddu, Project Manager, Viroclinics, a Cerba Research Company				
11:25	Cutaneous jet injection of naked mRNA for safe and effective vaccination against infectious diseases				
11:40	Prof Satoshi Uchida, Professor, Tokyo Medical and Dental University & Chief Medical Officer, Crafton Biotechnology				
11:55	A quadrivalent mRNA-lipid nanoparticle vaccine broadly protects against diverse <i>Orthopoxviruses</i> Dr Alec Freyn, Principal Scientist, Virology, Moderna				
12:10	AI-Immunology™ for vaccine target discovery, design and development (TBC) Thomas Trolle, Director of Bioinformatics and AI/ML, Evaxion Biotech				
12:25	Reducing Vaccine-Induced Immunological Cross-Reactivity Between Flaviviruses Vaccines Dr Sebastian Ulbert, Deputy Director & Head Department of Vaccines and Infection Models, Fraunhofer Institute for Cell Therapy and Immunology				
12:40-14:10 - Lunch Expo & Networking Break					
14:10	A Novel, Single-dose, Live, Attenuated, Minimally Replicating Mpox Vaccine				
14:25	Dr Zeil Rosenberg, Executive Vice President, Tonix Pharmaceuticals				
14:40	IAVI's Lassa vaccine candidate and the challenges of doing a field efficacy study in West Africa				
14:55	Dr Marion Gruber, Vice President of Public Health & Regulatory Affairs, IAVI & Former Director, Office of Vaccines Research and Review, CBER/FDA				
15:10	Design and proof of principle in a mouse model of a promising vaccine for Zika virus currently in Phase I clinical trial				
15:25	Prof Lance Turtle, Chair and Honorary Consultant Physician in Infectious Diseases; Deputy Head, Department of Clinical Infection, Microbiology and Immunology, University of Liverpool				
15:40	Panel: Post-authorization safety and effectiveness evaluation of vaccines deployed under emergency use authorization				
15:55					
16:10	- Diseases (e.g. Ebola, Malaria, Dengue) that are associated with outbreaks and are not established as endemically with vaccines that have/are being developed				
16:25	- How should the global health community consider evaluation of these vaccines outside of clinical trials leading to EUA?				
	Moderator: Dr Walter Straus, VP, Clinical Safety, Moderna Prof Miriam Sturkenboom, President, VAC4EU & Professor of Real World Evidence & Head, Department of Data Science and Biostatistics, Julius Center, UMC Utrecht Dr Gabrielle Breugelmans, Director of Epidemiology and Data Science, CEPI Dr Bradford Powell, Lead Scientific Advisor, Blu Zone Bio				
16:40	END OF TRACK				
<u>Workshops</u>		<u>DAY 1</u>	<u>DAY 2</u>	<u>DAY 3</u>	

DAY 2 – Wednesday 30th October

Fira de Barcelona, Montjuic

Agenda-At-A-Glance		KEYNOTES			
Clinical Trials	One Health & Veterinary	Respiratory	Emerging & Infectious Diseases	AMR & Bacterial Vaccines	Bioprocess & Manufacturing
AMR & Bacterial Vaccines					
<i>Theatre 4</i>					
Chair: Dr Jan Poolman, Former Head Bacterial Vaccine Discovery and Early Development, Johnson & Johnson					
11:10	Panel: Where are we with current TB vaccine efforts?				
11:25	<ul style="list-style-type: none"> - Predicted the impact of novel vaccines on disease burden and AMR - Including AMR surveillance during TB Vaccine trials 				
11:40	<ul style="list-style-type: none"> - Reaching communities most effect by TB, are we considering cost and delivery? <p>Moderator: Dr Jan Poolman, Former Head Bacterial Vaccine Discovery and Early Development, Johnson & Johnson Dr Marion Gruber, Vice President of Public Health & Regulatory Affairs, IAVI & Former Director, Office of Vaccines Research and Review, CBER/FDA Dr Ruben Rizzi, Senior Vice President, Global Regulatory Affairs, BioNTech Dr Nick Jackson, CEO, Novo Nordisk Foundation Initiative for Vaccines & Immunity (NIVI)</p>				
11:55	Clinical Development of MTBVAC, a live attenuated MTb vaccine Dr Bernard Fritzell, Independent Consultant, Tuberculosis Vaccine Initiative				
12:10	Update on the Ph3 E.coli/ExPEC vaccine Dr Jan Poolman, Head Bacterial Vaccine Discovery and Early Development, Johnson & Johnson				
12:25	Establishing bacterial vaccine priorities: <i>S. aureus</i> Dr Suzanne Welten, Scientific Manager Immunology, J&J innovative Medicine				
12:40-14:10 - Lunch Expo & Networking Break					
14:10	Progress towards a vaccine against Klebsiella Dr Francesco Berlanda Scorza, VP, Global Health R&D Vaccines Head and GVGH Institute, GSK				
14:25	Novel Mucosal Approaches in Bacterial Vaccine Development: Klebsiella Nasal Vaccine and Oral Strategies for ETEC and Polio Dr Elizabeth Norton, Associate Professor, Department of Immunology & Micrology, Tulane University				
14:40	A Novel Vaccine Against Neisseria Gonorrhoeae Dr Michael Kowarik, CSO, Limmatech				
14:55	Vaccine progress towards Group A Strep Dr Helge Dorfmueller, PI, Molecular Microbiology, University of Dundee				
15:10	Intranasal Immunization: Device and Formulation Promises and Challenges- Title TBC				
15:25	Lucas Silva, Senior Specialist, Nanopharm, an Aptar Pharma company Nektaria Karavas, Global Director, BD, Nasal Vaccines, Antivirals and Immuno-stimulants, Aptar Pharma				
15:40	Panel: The Role of Vaccines & mAbs in Neonatal Sepsis Prevention				
15:55	<ul style="list-style-type: none"> - Overview of the epidemiology, disease burden and current vaccine & mAb development for neonatal sepsis. - Biological complexities of major neonatal sepsis pathogens: Klebsiella and Group B Streptococcus, including serotype diversity and resistance profiles. - Comparing maternal vs infant immunisation strategies - Potential impacts of RSV maternal vaccination outcomes on future messaging & uptake. - Identifying priorities for future research and strategies to enhance neonatal sepsis prevention. <p>Dr Timothy Cooke, CEO, Omniose Dr Michael Kowarik, CSO, Limmatech Dr Simona Rondini, Head Bacterial Projects and Senior Project Leader, GSK Dr Stephen Lockhart, Director, Senior Consultant, Hurst Grange Associates Dr Bengt Johansson Lindbom, CSO, Minervax Prof Paul Heath, Co-Founder, Centre for Neonatal and Paediatric Infection // Prof Shabir Madhi, Dean, Faculty of Health Sciences & Professor of Vaccinology, University of the Witwatersrand & Director, (VIDA) - invited</p>				
16:40	END OF TRACK				
<u>Workshops</u>		<u>DAY 1</u>	<u>DAY 2</u>	<u>DAY 3</u>	

Day 3 – Thursday 31st October

Fira de Barcelona, Montjuic

Agenda-At-A-Glance		KEYNOTES			
Registration Opens: 08:30 (TBC)					
Expo & Networking Break: 09:00-09:30					
Track Presentations: 09:30-11:30					
Manufacturing Technologies <i>Theatre 1</i>	Partnerships & Access <i>Theatre 2</i>	Supply & Logistics <i>Theatre 6</i>	Cancer & Therapeutic <i>Theatre 3</i>	Neglected Disease & Global Health <i>Theatre 4</i>	Clinical Trials <i>Theatre 5</i>
Expo & Networking Break: 11:30-12:30 Join us in the exhibition hall for: 1-2-1 partnering & poster sessions					
Track Presentations: 12:30-14:45					
Manufacturing Technologies <i>Theatre 1</i>	Partnerships & Access <i>Theatre 2</i>	Supply & Logistics <i>Theatre 6</i>	Cancer & Therapeutic <i>Theatre 3</i>	Neglected Disease & Global Health <i>Theatre 4</i>	Clinical Trials <i>Theatre 5</i>
Comfort Break: 14:45-15:00					
Closing Keynote: 15:00-16:00					
Will AI Define Tomorrow's Vaccines? Insights into Tech-driven Innovations					
END OF CONGRESS					
Workshops	DAY 1	DAY 2	DAY 3		

Day 3 – Thursday 31st October

Fira de Barcelona, Montjuic

Agenda-At-A-Glance		KEYNOTES			
Manufacturing Technologies	Partnerships & Access	Supply & Logistics	Cancer & Therapeutic	Neglected Disease & Global Health	Clinical Trials
Cancer & Therapeutic Vaccines					
<i>Theatre 3</i>					
<i>Sponsored by GenScript</i>					
Chair: Dr Niranjan Sardesai, CEO, Geneos Therapeutics					
09:30	Targeting mKRAS Vaccination to the Lymph Nodes to Promote Anti-tumor Immunity: Preliminary Results from the Phase 1 AMPLIFY-201 Trial Robert Connelly, CEO / Dr Pete DeMuth, CSO, Elicio Therapeutics - TBC				
09:45	Personalized cancer vaccines beyond neoantigens (title to be confirmed) Dr Birgitte Rønø, Chief Scientific Officer, Evaxion Biotech				
10:00	Neoantigen Immunotherapy for Solid Tumors: Molecular Responses and Clinical Benefit in End-Stage Patients – Title TBC Dr Karin Jooss, EVP & Head of R&D, Gritstone Bio				
10:30	FiCAT, A Next Generation Gene Writing Platform for Advanced Therapies. Dr Avencia Sanchez-Mejias, CEO & Co-Founder, Integra Therapeutics on behalf of GenScript				
10:45					
11:00	BioNTech's oncology pipeline: combining cancer vaccines with immunomodulators & targeted therapies Dr Uta Tschiesner, Sr Director, Global Medical Advisor, BioNTech				
11:15					
11:30-12:30 - Expo & Networking Break					
12:30	CAMYO-01: colorectal cancer-specific camyotypes formulated into an mRNA vaccine Cedric Bogaert, Co-Founder and CEO, MyNEO Therapeutics				
12:45					
13:00	Bioinformatic Capabilities For Clonal Neoantigen Selection Andrew Craig, SVP, Bioinformatics & Data Science, Achilles Therapeutics				
13:15					
13:30	Targeting multiple neoantigens in personalized cancer vaccines Dr Niranjan Sardesai, CEO, Geneos Therapeutics				
13:45					
14:00	mRNA-4157 Individualized Neoantigen Therapy: mRNA therapeutics coming of age in cancer Senior Representative (TBC), Moderna				
14:15					
14:30	NOUS-209 genetic vaccine encoding shared neoantigens for treatment and interception of MSI tumors Dr Elisa Scarselli, CSO / Dr Morena D'Alise, VP of Immunology, Nouscom - TBC				
14:45	END OF TRACK				
Workshops		DAY 1	DAY 2	DAY 3	

Day 3 – Thursday 31st October

Fira de Barcelona, Montjuic

<u>Agenda-At-A-Glance</u>		<u>KEYNOTES</u>			
<u>Manufacturing Technologies</u>	<u>Partnerships & Access</u>	<u>Supply & Logistics</u>	<u>Cancer & Therapeutic</u>	<u>Neglected Disease & Global Health</u>	<u>Clinical Trials</u>
Neglected Disease & Global Health					
<i>Theatre 4</i>					
Chair: Dr Marlene Espinoza, Director & Product Development Lead, Emerging Infectious Diseases, IAVI					
09:30	Chagas Disease				
09:45	Dr Maria Elena Bottazzi, Co-Director, Texas Children’s Hospital for Vaccine Development, Baylor College of Medicine				
10:00	Multi-pathogen vaccination to address challenges in LMICs – Title TBC				
10:15	Dr Hans Keirstead, CEO, AIVITA Biomedical & CEO, Human Immunome Project				
10:30	Vaccines for a sustainable planet: Insights from Palio				
	Dr Francesco Berlanda Scorza, VP, Global Health R&D Vaccines Head and GVGH Institute Director, GSK				
10:45	A strategy blueprint to combat the superbug Neisseria gonorrhoeae				
	Prof Aleksandra Sikora, Professor, College of Pharmacy, Oregon State University & Adjunct Professor, Vaccine and Gene Therapy Institute, Oregon Health and Science University				
11:00	New saponin adjuvant for global health cost effectiveness – Title TBC				
11:15	Dr Gerben Marsman, Project Manager, Vaccine Formulation Institute				
11:30-12:30 - Expo & Networking Break					
12:30	Structure-based vaccine design for malaria antigens & progress on second-gen malaria vaccines				
	Dr Katie Ewer, Senior Project Leader, Malaria Vaccines, GSK Vaccines				
12:45	Panel: Advancing Malaria Vaccine Development: Public-Private Partnerships, Novel Technologies, and Multistage Strategies				
13:00					
13:15	- Current strategies for developing the next-generation malaria vaccines				
13:30	- What exciting prospects do novel technologies present for advancing malaria vaccine development, especially multistage vaccines?				
	- Accelerating malaria vaccine development through public-private partnerships				
	Moderator: Dr Irene Nailain Nkumama, Malaria programme Manager, European Vaccine Initiative				
	Dr Katie Ewer, Senior Project Leader, Malaria Vaccines, GSK Vaccines				
	Dr Thierry Rolling, Director, Clinical Development, BioNTech				
	Prof Sumi Biswas, Group Leader, Transmission Blocking Malaria Vaccine, University of Oxford & Co- Founder & CSO, SpyBiotech				
	Prof Meta Roestenberg, Clinical Head, Controlled Human Infection Center, Leiden University				
13:45	Panel: Bridging Gaps in Global Health: Building a Sustainable Vaccine Production Ecosystem in Latin America				
14:00	- What type of manufacturing capabilities need to be established to take ownership of vaccine production and distribution within the region?				
14:15	- Adopting and innovating new tech to enhance self-reliance and reduce dependency on global supply chains				
14:30	- The importance of strategic regional partnerships; addressing challenges in knowledge transfer, and building sustainable local expertise in vaccine production				
	- Strategies for creating a sustainable and resilient vaccine manufacturing ecosystem				
	- Examination of the regulatory frameworks governing vaccine manufacturing in LATAM; Challenges in harmonizing regulations across the region to streamline manufacturing processes				
	Dr Maria Elena Bottazzi, Co-Director, Texas Children’s Hospital for Vaccine Development, Baylor College of Medicine				
	Dr Dagmar García Rivera, Vice Director, Research and Development, The Finlay Institute of Vaccines				
	Dr Jorge Osorio, Professor, Department of Pathobiological Sciences, School of Veterinary Medicine, University of Wisconsin-Madison & President and CEO, VaxThera – TBC				
	Analia Acebal, Consultant, Sustainable Vaccine Manufacturing Lead, CEPI & CEO & Founder, NoLimit Bio - TBC				
	Elvira Zini, Director of Scientific & Technical Affairs, Laboratorios Richmond SACIF - TBC				
14:45	END OF TRACK				
<u>Workshops</u>		<u>DAY 1</u>	<u>DAY 2</u>	<u>DAY 3</u>	

Day 3 – Thursday 31st October

Fira de Barcelona, Montjuic

Agenda-At-A-Glance			KEYNOTES		
Manufacturing Technologies	Partnerships & Access	Supply & Logistics	Cancer & Therapeutic	Neglected Disease & Global Health	Clinical Trials
Manufacturing Technologies					
<i>Theatre 1</i>					
Chair: Arlene Joyner, Director, Industrial Base Management and Supply Chain, Administration for Strategic Preparedness and Response, US Department of Health and Human Services					
09:30	Development, Scale-Up, and Manufacture of an Oncolytic Virus Vaccine Senior Representative, APC Ltd.				
09:45	Panel: Global Implications of the BIOSECURE Act				
10:00	- What global efforts are being made to integrate and ensure global manufacturing capacity?				
10:15	- Will the EU follow suit and implement similar policies?				
10:15	Moderator: Taylor Sexton, Executive Director, Medical Counter Measures Col (Ret) Vic Suarez, Founder and Principal Growth Partner, Blu Zone Bio Arlene Joyner, Director, Industrial Base Management and Supply Chain, Administration for Strategic Preparedness and Response, US Department of Health and Human Services Sankarasubramanian Rajaram, Head of Global Medical Strategy, CSL Seqirus - TBC Invited: Olivier Girard, Head, Medical Counter Measures, HERA, European Commission				
10:30	Vaccines On Demand: How Far Can We Downsize Modular Manufacturing?				
10:45	Dr Daniel Wolfe, Branch Chief, CBRN Vaccines, BARDA				
11:00	Analia Acebal, Consultant, Sustainable Vaccine Manufacturing Lead, CEPI & CEO & Founder, NoLimit Bio - TBC Senior Representative, General Electric & Nature's Toolbox – TBC				
11:15	Title TBC Senior Representative, TECIL				
11:30-12:30 - Expo & Networking Break					
12:30	Mathematical Modelling Tools to Accelerate Vaccine R&D and Manufacturing				
12:45	Dr Irina Meln, Project and Innovation Manager, European Vaccine Initiative Dr Michelangelo Canzoneri, Global Head of Group Smart Manufacturing, Merck – TBC Prof Martina Micheletti, Co-Director, EPSRC Vaccine Manufacturing Hub For A Sustainable Future & EPSRC/DHSC Future Vaccine Manufacturing Hub, UCL – TBC				
13:00	New Technologies for Flu Vaccines. Better Vaccines? Dr Robert C Huebner, Principal Consultant, Latham Biopharm Group				
13:15	Highly Multiplexed, 30-minute VaxArray® Immunoassay for Pneumococcal Vaccine Antigen Characterization Senior Representative, bioMérieux				
13:30	Measles-Rubella Microarray Patches & MAP Technologies – Title TBC				
13:45	Dr Ajoy Chakrabarti, Portfolio & Platform Lead, Polio, Global Health Program, Bill & Melinda Gates Foundation				
14:00	From Formulation to Function: Closing Current Gaps in Microarray Development: TBC Professor Anne Moore, Principal Investigator, University College Cork				
14:15	Applying Analytical Technologies to Support Process Development				
14:30	Dr Gautam Sanyal, Principal Consultant & Founder, Vaccine Analytics				
14:45	END OF TRACK				
Workshops		DAY 1		DAY 2	
DAY 3					