UK Health Security Agency

Enclosure AB/25/027

UKHSA Advisory Board

Title of paper	The vaccine system; UKHSA's role, priorities, and future strategy (Paper 1 of 2).
Date	13 May 2025
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1. Purpose of the paper

1.1. The purpose of the paper is to:

a) Inform Advisory Board members of the complex system which governs vaccine discovery, development, delivery, and evaluation in England, and UKHSA's unique contributions at both an England and 4-nation geography.

b) Set out the major challenges and upcoming developments to this vaccine system, and the likely impacts and opportunities for UKHSA and the system as a whole.

c) Lay the foundation for a future Advisory Board discussion on UKHSA and vaccine system strategy in the Autumn.

2. Recommendations

2.1. The Advisory Board is asked to:

a) **NOTE** the background and contextual information provided in this paper.

b) **COMMENT** on the proposed scope of a follow-up paper and Advisory Board discussion on systems and UKHSA strategy.

3. Background

3.1. Vaccines have demonstrated significant positive impacts on morbidity and mortality over the past century and are considered second only to sanitation as the public health intervention with the largest impact. With the advent of national immunisation programmes (and other health interventions) the average life expectancy has increased from 51 to 81 years in the UK. However, the development, design, implementation and evaluation of new and existing immunisation programmes remains vital to assuring the health and prosperity of the public.

3.2. Challenges such as declining uptake and inequalities (due to vaccine hesitancy, barriers to access etc.), and the emergence of new infectious disease threats, demonstrate the need for expertise and co-ordination of efforts across the vaccine life cycle.

3.3. The Advisory Board previously received a paper (May 2024,UKHSA's role in optimising and delivering the national immunisation schedule) which set out the agency's role in the delivery of routine vaccine programmes. This paper will: refresh some of those messages; provide updated and wider context on the breadth of UKHSA's remit as it relates to the development and delivery cycle of a vaccine; and outline the changing vaccine landscape in England to support future strategic discussions.

4. Declining vaccine uptake and inequalities

4.1. Over the last decade, a general decline in the uptake of vaccinations in the routine immunisation schedule has occurred (**Appendix A** for vaccine schedule and coverage). The decline is not specific to particular vaccines (**Fig 1**) but does vary notably by deprivation group (**Fig 2**) as well as by geography and other characteristics such as age, gender and ethnicity. Disparities in uptake are cumulative – i.e. a consistent difference in uptake amongst eligible children in a deprived area (compared to a more affluent area) or a certain population group over successive years will progressively increase the risk of outbreaks of vaccine preventable disease within those communities, although high overall coverage in the general population mitigates this risk. These same communities often benefit more from vaccination (even with lower uptake) because of higher risk of transmission of these diseases, related to multigenerational households, high density households and incursions of disease from endemic areas.

4.2. Latest findings from UKHSA's annual survey on parental attitudes to vaccination suggest most parents asked were happy with the safety of vaccines for babies and young children (88% down from 92% in 2022); 82% had trust in vaccines. Some 59% of parents had **not** seen or heard messaging that would make them concerned about any childhood vaccines (notably down from 79% in 2022).

4.3. A 95% target is recommended by the World Health Organization (WHO) for a number of the routine immunisation programmes (such as diphtheria, tetanus and polio) to ensure sufficient population coverage to reduce disease transmission (herd immunity); **Fig 1** describes current coverage against this target. For Flu, a target of 75% coverage for over 65's is recommended, which was met nationally for the 23/24 season.

4.4. Addressing inequalities in the impact of vaccine-preventable disease, and uptake of vaccines, requires a focus on the basics - i.e. ensuring effective vaccine delivery through core programmes with a universal approach, as improving coverage overall will help under-served populations through herd protection and other mechanisms. Targeted approaches focused on people and place (utilising the expertise of those with lived experience, and integrating services to address a range of health needs rather than vaccination in isolation) also play a role.

4.5. UKHSA is supporting action on uptake and inequalities, including through:

a) Development of an updated UKHSA Immunisation Equity Strategy which will be published in May 2025. Contributions to this include consideration by, and comments from, the agency's Equalities, Ethics and Communities Committee. This aims to support Integrated Care Boards (ICBs) in delivering their duties and ensuring that they understand the strategic intent of immunisations and have the right tools and information to deliver their function.

b) A UKHSA-led 4-nation forum on declining uptake, convened at the request of the Joint Committee on Vaccination and Immunisation (JCVI) and coordinated under the umbrella of the tri-partite programme boards (described in Section 5), bringing together UK-wide expertise. This is a forum to share intelligence and good practice and is developing areas for potential collaborative work (such as extension of the attitudinal tracker survey across the UK).

c) Regular engagement with Ministers and the health tripartite which ensures that the national bodies are aligned and there is ministerial engagement and funding to optimise immunisation programmes and delivery.

Figure 1. Vaccine coverage of routine childhood immunisation programmes.

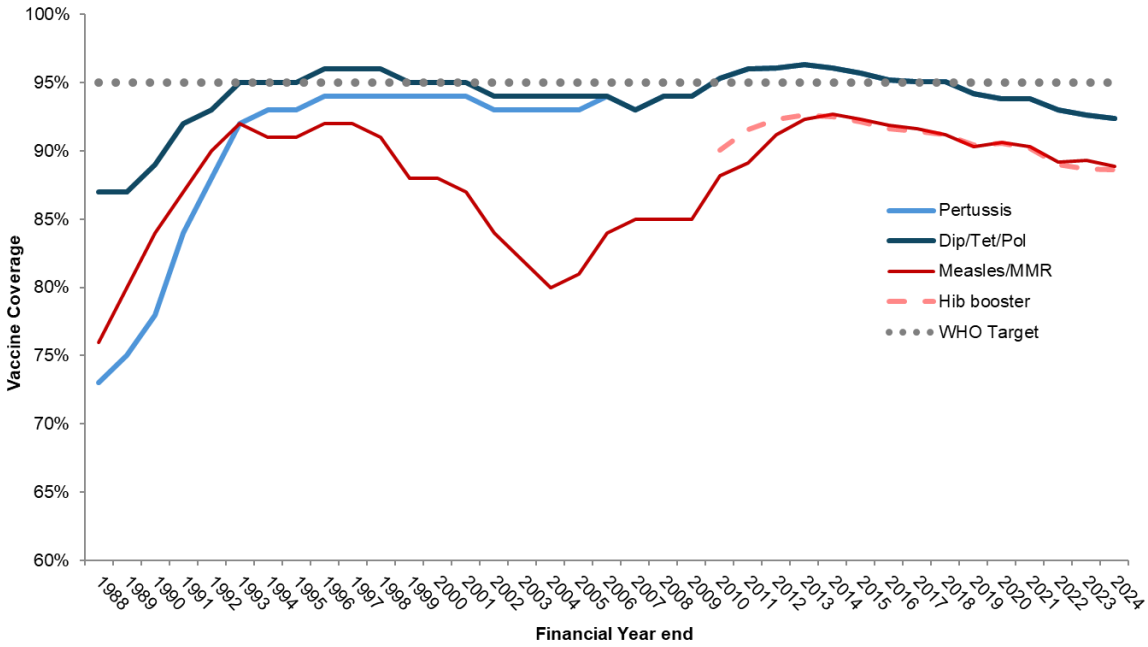

Figure 2. Coverage of MMR-first dose at 5 years by deprivation decile.

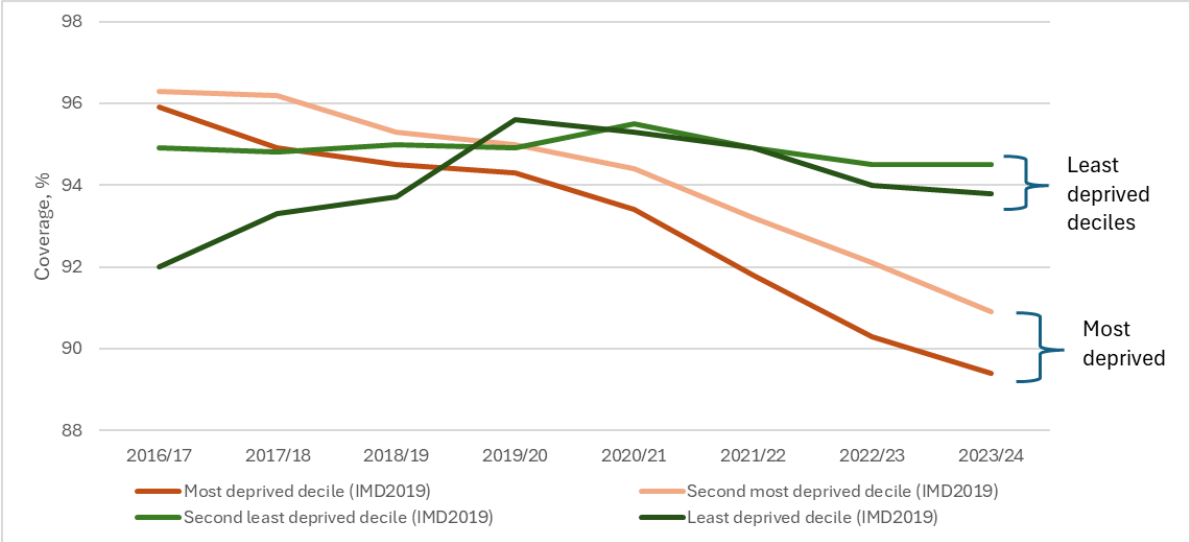

Figure 2 data as available through Fingertips.

5. The current (and possible future) vaccine system in England

5.1. As detailed in the May 2024 Advisory Board paper, 17 infectious diseases are targeted through nationally available routine immunisation programmes (inclusive of COVID-19, and the annual seasonal flu programmes for children and older adults). A summary of national routine immunisations is outlined in **Appendix A**.

5.2. In addition, this routine programme offer is supplemented by targeted vaccination schemes for high-risk groups (including hepatitis A, B, human papillomavirus and mpox) and recommended vaccinations for pregnant women (seasonal flu, Pertussis and respiratory syncytial virus (RSV)).

5.3. These programmes are not static; changes to eligible cohorts, schedules, or vaccine products occur very commonly. There will be significant changes to the **childhood** schedule from June 2025 (described below in 5.7d), expansions to existing or introduction of new **adult** programmes in 2025/26 (described below in 5.7e), and anticipated re-procurement by UKHSA of at least 6 contracts across the national routine programmes in the next 18 months.

5.4. The delivery of these routine programmes, which make up the UK's world-leading immunisation schedule, is governed by a UKHSA-DHSC-NHSE tripartite. This tripartite, and UKHSA's role in it, is explained in detail in the May 2024 Advisory Board paper.

5.5. The national vaccine system is however broader than this tripartite and concerns more than the delivery of routine immunisation programmes. A complex and frequently changing landscape - which requires inter-connectedness of academic institutions, commercial partners, funders, national and local government organisations, regulators, and health system providers - all contribute to the discovery, development, manufacture, delivery, monitoring, evaluation and improvement of new and existing vaccine initiatives.

5.6. In recent years, this system has been altered by a number of policy initiatives and organisational changes, including:

a) The **emergence of the Vaccines Task Force** during the COVID-19 pandemic and subsequent transition of aspects of this function to UKHSA. This has culminated in the recent establishment of the Vaccines and Countermeasures Delivery Directorate (CVCD), which leads the procurement, storage and distribution of vaccines and countermeasures, and drives the agency's work on strategic industry partnerships.

b) Publication in 2023 of the **NHSE Vaccine Strategy** which, amongst other things, laid out a path for delegation of vaccine commissioning responsibilities to the 42 ICBs across England.

5.7. Some foreseeable changes in the coming years include:

a) **NHSE Abolition**: The recent announcement on the merging of NHSE with DHSC, and the implications on the tripartite delivery of vaccinations in England, is not yet fully understood. Changes in roles across DHSC and NHSE has the potential to lead to uncertainty on responsibilities at a system level and will require both an

understanding of the current responsibilities and alignment into future organisations.

b) **Delegated ICB commissioning**: Shadow arrangements for many ICBs to undertake the commissioning of vaccines were established in April 2025, with full delegated responsibilities to be in force from April 2026. However, the enaction of this policy comes at a time when ICBs are also adapting to both significant (50%) budget pressures, which may potentially result in ICBs merging, and changes to the national leadership of NHSE.

c) **Centralised flu procurement**: The adult seasonal influenza programme is the only national routine programme where vaccines are not procured centrally, reflecting the uniqueness of this programme (vaccines are produced 'just in time' for an upcoming flu season, based on WHO recommendations, and have a short deployment window). The status quo is for local providers, such as GPs and Pharmacies, to procure their own stocks based on local estimates of uptake. The NHS vaccines strategy sets out a proposal for a national review on whether centralised procurement, and potentially the supply and distribution, of flu vaccines should occur.

d) **New and changing childhood routine programmes**: The most significant changes to the childhood immunisations schedule for more than a decade will be realised in two upcoming phases (1 July 2025 and 1 January 2026). These changes reflect recommendations from JCVI in order to optimise the control of several diseases, and include: removal of Hib/MenC at 12 months; altered timing of Men B and PCV13 to optimise protection of very young infants; introduction of a new 18-month appointment for an additional Hexavalent vaccine (the '6-in'1 vaccine described in Appendix A); bringing forward MMR2 to 18 months; and potential introduction of a new varicella programme at 12 and 18 months with a selective catch-up programme.

e) **New and changing adult routine and selective programmes**: Planned additions for adults include a prospective Mpox and Gonorrhoea programme (the latter making use of a MenB vaccine) for high risk individuals via sexual health services (August 2025); anticipated expansion of the eligibility for the shingles vaccine to severely immunosuppressed individuals aged 18-49; changes to the pneumococcal programme (November 2025); and **potential** expansion of eligibility for the newly-introduced RSV programme.

f) **Supply Chain Optimisation:** Upcoming re-procurement of the storage and distribution contracts by CVCD is an opportunity to right size UKHSA's capacity. A key priority for UKHSA will be to drive further value for money in operational delivery, ensuring the agency retains the existing capabilities to both deliver routine programmes and post-exposure and outbreak response in the changing context.

g) **Development of the Moderna Strategic Partnership**: The 10-year MSP commits Moderna to build and maintain a facility that can scale up to respond to future pandemics and health emergencies, as well as to invest over £1billion into UK research and development. It allows the UK priority access to authorised products in Moderna's pipeline.

6. UKHSA's contribution

6.1. UKHSA plays a vital and unique role across the vaccine development and delivery cycle. In brief, where a vaccine **does not yet exist, or is in development**, UKHSA supports by:

a) Sustaining and enhancing the agency's scientific capabilities (including laboratory-based pathogen surveillance, genomics, pathogen characterisation, immunology, correlate of protection, and assay development) to inform industry and academia in vaccine development; to design and demonstrate a cost-effective approach for a potential UK programme; and to conduct early laboratory validation and evaluation through the Vaccine Development and Evaluation Centre and other partners, including laboratory work to support clinical trials.

b) Engagement with partners, in accordance with the UKHSA Commercial Strategy, to provide the appropriate commercial signals (such as through published procurement pipelines) and frameworks (such as our commercial partnerships framework) to drive market competition and shape development of new products.

c) Identification and communication of research and development (R&D) priorities for vaccines against current and future threats (such as via UKHSA's Priority Pathogen Family R&D Tool), and work with research funders and international bodies (e.g. WHO) to ensure those needs are met.

6.2. Where a licensed vaccine **exists** UKHSA's role includes:

a) Advising government and providing the technical and scientific evidence (including real world studies, clinical, and cost effectiveness evaluation) that enables the independent JCVI to provide recommendations to be delivered to Ministers. UKHSA also provides the secretariat to this committee.

b) Producing essential national guidance, clinical advice and training materials for frontline health care professionals, and the legal mechanisms to enable non prescribers to consent and administer vaccines for all vaccine-preventable infectious diseases.

c) Delivering a suite of published assets and resources (including information in a range of languages and accessible formats such as braille, and for different audiences such as education settings) to inform the public and to support the informed consent process.

d) Providing overall leadership to support the safety and quality of the programmes by producing clinical standards and responding to incidents (including safety signals), thus reinforcing public and professional trust in immunisation.

e) Working across the market to encourage a competitive manufacturing landscape, and ensuring best value in procurement (considering quality, cost and sustainability).

f) Within the tripartite, leading and coordinating the successful design, implementation and optimisation of safe and effective vaccination programmes, including post implementation monitoring of disease surveillance and coverage (including inequalities) through the publication of official statistics by general practice, ICBs and local authority geography.

g) Procuring, storing and distributing vaccine stock, whilst ensuring an agile and resilient supply chain and driving efficiencies through contract management.

h) Building the post-market evidence base for vaccines, using enhanced laboratory-based surveillance of vaccine preventable diseases, and epidemiological evaluation studies of programmes, to guide modifications.

7. UKHSA's Vaccines Board

7.1. A UKHSA Internal Vaccines Board (VB) was first established in late 2023 with the purpose of addressing historic fragmentation of accountabilities across expert teams in UKHSA and thereby ensuring cross-UKHSA alignment on, and awareness of, the agency's multiple vaccine-related activities. The Chief Scientific Officer chaired this board from inception to March 2023; the Director of Strategy and Policy now chairs this board. It has membership consisting of Director or DD-level representation from all UKHSA groups, reflecting the varied expertise relating to vaccines.

7.2. The Board aims to set the strategic direction of UKHSA's vaccine work, and holds decision making powers where these relate to shared, cross-agency programmes of work delivering on UKHSA Strategic Priority 2: *Improve health outcomes through vaccines*. In recent months the VB has: received regular updates on cross-agency vaccine activity and shaped relevant 25/26 business plans accordingly; established a VB risk register for the escalation and mitigation of programmatic or cross-agency vaccine risks; steered the cross-agency input into the growth of commercial relationships with strategic partners in the vaccine industry; and has drafted a Strategic Position Paper for vaccines within UKHSA.

7.3. The VB aims to be the key enabler of UKHSA's vision on vaccines and should be the forum through which relevant major organisational strategy and engagement is agreed or assured (noting that the governance of bespoke programmes of work, such as the Moderna Strategic Partnership, exist elsewhere) and that DHSC hold the overall policy lead for the tripartite. Given the significant implications of the abolition of NHSE, the VB will maintain oversight of discussions with DHSC on future system design.

8. Next steps: a future strategic Advisory Board discussion

8.1. Given the changing organisational landscape within the vaccine system, and the pernicious nature of challenges such as inequalities in uptake, there is pressing need for system-wide strategic alignment and clearer accountabilities across the vaccine development and delivery cycle.

8.2. The UKHSA VB has begun its own thinking on this, through a Strategic Position Paper which seeks to: re-emphasise UKHSA's added value within the vaccine system; outline the agency's own vision and objectives for vaccines; and sets the foundation for improved join-up of work and expertise within the agency. This Position Paper could act as a platform for the necessary system-level discussions.

8.3. With the above in mind, a follow-up item at the Advisory Board is proposed, to consider the following as discussion items:

a) Strategic priorities **for UKHSA**

- Improving internal UKHSA governance processes and agency-wide collaboration, including consideration of the role of the Vaccines Board, with respect to the DHSC role.

- Sustaining and strengthening of UKHSA's clinical, scientific and programme management.

- Ensuring local / regional system leadership, coordination and specialist public health expertise is retained, to support local immunisation provision and operational delivery.

b) Strategic priorities **for the system**

- Establishing roles and responsibilities across the vaccine development and delivery cycle, and minimising risk, given organisational change.

- Influencing vaccine research priorities, and development pipelines.

- Capitalising on commercial levers and opportunities in the vaccine space and demonstrating relevance to the HMG Growth Mission.

- Resourcing and delivering increasing numbers of vaccine programmes with appropriate national, regional and local clinical leadership.

- Addressing inequalities and declining uptake.

c) The governance to address these priorities

- Consideration of a system-wide, end-to-end accountability and decision-making framework.

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Appendices

- Appendix A (Enclosed): Routine immunisation programmes in England

APPENDIX A: Routine immunisation programmes in England

	Diseases covered	Trade name	Eng coverage 23/24 (Peak)
8 weeks	'6-in-1' (**1 of 3**): Diphtheria, tetanus, pertussis, polio, Haemophilus (Hib), hep B	Infanrix hexa (**GSK**) or Vaxelis (**Sanofi**)	
	Meningococcal group B (**1 of 3**)	Bexsero (**GSK**)	
	Rotavirus (**1 of 2**)	Rotarix (**GSK**)	
12 weeks	'6-in-1' (**2 of 3**)	Infanrix hexa (**GSK**) or Vaxelis (**Sanofi**)	
	Pneumococcal (**1 of 2**)	Prevenar 13 (**Pfizer**)	**93.2%** by 1 y/o (93.8%, 2021/22)
	Rotavirus (**2 of 2**)	Rotarix (**GSK**)	**88.5%** by 1y/o (90.2%, 2020/21)
16 weeks	'6-in-1' (**3 of 3**)	Infanrix hexa (**GSK**) or Vaxelis (**Sanofi**)	**91.2%** by 1y/o (94.7%, 2012/13)
	Meningococcal group B (**2 of 3**)	Bexsero (**GSK**)	
1 year	Hib and Meningococcal group C (MenC)	Menitorix (**GSK**)	**88.6%** by 2y/o (92.7%, 2012/13)
	Pneumococcal **(2 of 2)**	Prevenar 13 (**Pfizer**)	**88.2%** by 2y/o (92.5%, 2012/13)
	Measles, mumps and rubella (**1 of 2**)	MMRvaxPro (**MSD**) or Priorix (**GSK**)	**88.9%** by 2y/o (92.7%, 2013/14)
	Meningococcal group B (**3 of 3**)	Bexsero (**GSK**)	**87.3%** by 2y/o (89.0%, 2020/21)
2 to 16 yrs	Influenza (annually)	Fluenz Tetra (**AZ**)	Varies by eligible cohort
3 years 4 months	Diphtheria, tetanus, pertussis + polio	REPEVAX (**Sanofi**)	**82.7%** by 5y/o (88.9%, 2012/13)
	Measles, mumps and rubella (**2 of 2**)	MMRvaxPro (**MSD**) or Priorix (**GSK**)	**83.9%** by 5y/o (88.6%, 2014/15)
12 to 13 yrs	Human papillomavirus (HPV, 9 types)	Gardasil 9 (**MSD**)	**76.7%** by 14-15y/o (91%, 2013/14)
14 to 15 yrs	Tetanus, diphtheria and polio	REVAXIS (**Sanofi**)	**72.7%** by 14-15y/o (87.8%, 2018/19)
	Meningococcal groups A, C, W and Y	MenQuadfi (**Sanofi**)	**73.0%** by 14-15y/o (88%, 2018/19)
65 years	Pneumococcal	Pneumovax 23 (**MSD**)	**73.1%** aged 65+ (73.1%, 2023/24)
65 years*	Shingles (**1 of 2**)	Shingrix (**GSK**)	**83.8%** by 80y/o
65 years+	Influenza (annually)	Multiple	**77.8%** aged 65+ (82%, 2021/22)
75 years	Respiratory syncytial virus	Abrysvo (**Pfizer**)	New programme
75 years	COVID-19 (biannual booster, currently)	Comirnaty (**Pfizer**) / Spikevax (**Moderna**)	
Maternal	Influenza	Multiple (mainly **AZ**, **Seqirus**, **Sanofi**)	**32.1%** (47.2%, 2017/18)
Maternal	Pertussis	ADACEL (**Sanofi**)	**58.6%** (67.8%, 2020/21)
Maternal	Respiratory syncytial virus	Abrysvo (**Pfizer**)	New programme