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# NHS 10-year plan for health consultation 2024

## British Society for Immunology submission on vaccination

*December 2024*

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### Q1. What does your organisation want to see included in the 10-Year Health Plan and why?

The British Society for Immunology (BSI) is the leading UK organisation representing scientists and clinicians who study the immune system and vaccines. We are a trusted expert voice on vaccination and immunisation. Our members include immunologists, vaccinologists, infectious disease specialists, and public health specialists.

The BSI welcomes the government's prioritisation of preventative interventions as key to the health and productivity of our population. We agree that, where possible, prevention is better than cure, and fully support efforts to shift our focus for public health and healthcare in this direction where appropriate.

#### **Defining prevention and acknowledging the social determinants of health**

However, as the government will be aware, prevention of ill health is not only the responsibility of healthcare and local government. There is a huge amount of research on the social determinants of health, so it will be important for the government to define what it means by prevention, and what this means for the targeted efforts of the Department of Health & Social Care (DHSC) in particular, as well as other government departments.<sup>1</sup> It is also necessary to define prevention so that we can track and quantify the benefits of preventative interventions on the UK's health, productivity, and economy.

#### **The importance of vaccination and immunisation**

From the perspective of the BSI, representing scientists and clinicians working on immune-mediated conditions and treatments – we would hope to see vaccination and immunisation featured front and centre of the government's efforts on prevention, and featured prominently within the 10-year plan. Vaccination is among the world's most effective public health interventions, preventing up to five million deaths from infectious disease worldwide every year and preventing many more people from needing a stay in hospital<sup>2</sup>. Vaccines not only help to avoid hospitalisations and improve outcomes for patients, but they also deliver substantive economic benefit. Research has shown that the cost of the 2012-13 outbreak of measles in Merseyside (£4.4 million) was more than 20 times the cost of the vaccinations that could have prevented it (£182,909).<sup>3</sup> DHSCs' 2018 report 'Prevention is better than cure' outlines that health protection interventions which include immunisation average a return on investment of around £34.<sup>4</sup> There is a huge amount of research on the wider benefits of vaccination.<sup>5</sup>

## **Research and development on vaccination and immune therapies**

The Covid-19 pandemic also paved the way for new approaches to preventing infectious disease through accelerated research and development (R&D) in the UK. In particular, the use of new technologies, such as mRNA technology, open up a wealth of future R&D possibilities. New partnerships with industry in this area (such as those with Moderna<sup>6</sup> and BioNTech<sup>7</sup>) can be hugely helpful in terms of driving significant R&D infrastructure to enable this growth. In this light, there are many hugely exciting and potentially transformational vaccines in the pipeline, which could provide a step change in our ability to prevent infectious diseases that cause significant harm to our population, and require a vast amount of NHS resource.

Additionally, we are now using these technologies to develop treatments and preventative options for conditions such as cancer and Alzheimer's, which also have a vast human impact, and incur operational and economic pressure on the NHS<sup>8</sup>. Therefore, significant support, both in terms of funding and infrastructure, to enable the UK to lead on R&D on vaccines and immune therapies should be central to any long-term plan for our health service in England.

## **Q2. What does your organisation see as the biggest challenges and enablers to move more care from hospitals to communities?**

### **Challenges**

Falling vaccine uptake rates and associated increases in community transmission of vaccine preventable illnesses such as measles and whooping cough inevitably mean further increases in cases of these diseases requiring hospital admissions, and potentially even fatalities. In the recent UK measles outbreaks, one in five children who contracted the disease was admitted to hospital.<sup>9</sup>

Childhood vaccination statistics for 2023/24 for England continue the worrying multi-year trend of a decline in uptake in these routine vaccinations<sup>10</sup> and none meet the World Health Organization coverage target of 95% uptake at the correct time point<sup>11</sup>. We are now experiencing the impact from these long-term lower vaccine uptake rates, meaning community herd immunity has been lost for some infections, such as measles. Currently, both measles and pertussis are circulating at increasing levels through community transmission, leading to greater burden on healthcare services.

However, the childhood vaccination schedule is not the only area of concern. Many other vaccines that are given at other points across the life course, particularly those given in pregnancy and older age, remain significantly below target uptake rates, exposing these vulnerable populations to enhanced threat from preventable infectious disease and increasing the burden on the healthcare system. Influenza and other infections also continue to pose a risk to the population which can be mitigated through strong seasonal vaccine uptake which is critical for reducing admissions, and pressures on UK hospitals<sup>12</sup>.

It should also be noted that there is more work to be done to understand and quantify the benefits of vaccination in this context – particularly for childhood and routine vaccinations, as the nature of short-term NHS planning can mean that benefits are not always captured or understood.

## Enablers

Covid-19 has demonstrated that with improved vaccination uptake, pressures on primary and secondary care, particularly over winter when the biggest pressures are felt, can be alleviated, as research evidence has consistently demonstrated that those most likely to be hospitalised were unvaccinated<sup>13, 14</sup>. The introduction this year of RSV vaccines for older people and pregnant women holds real promise reducing the burden on healthcare providers for treating RSV infections, which can lead to hospitalisations for older people and small babies.

There have been many studies looking at how to improve vaccine uptake, many of findings of which are addressed by the NHS Vaccination Strategy. However, to summarise, to increase vaccine uptake, it is essential that i) vaccination services are accessible to the communities they serve; ii) vaccination and wider healthcare staff are empowered through dedicated training with the information and the means to engage with patients who have questions around immunisation; iii) there is a continued programme of engagement to ensure the public has access to clear, accurate information on vaccination; iv) provision of the right public health funding for vaccination services to function effectively.

Overall, optimum vaccination uptake in the general population is an absolutely critical enabler for reducing the need for hospital care for vaccine preventable illnesses, and thereby, freeing up resource for care settings to have time to set up more integrated ways of working to enable the 'left shift'. Currently, it is widely acknowledged that workload is excessively high in the NHS, which understandably may not leave time for initiative such as service redesign<sup>15</sup>.

Furthermore, over the longer-term acceleration of new vaccines and immune therapies coming through the pipeline will also be key in early diagnosis in primary care settings, and supporting a reduction in hospital care.

## Q3. What does your organisation see as the biggest challenges and enablers to making better use of technology in health and care?

### Challenges

In terms of vaccination, the challenges are many and varied but they are surmountable. The 2022 report *A Fresh Shot* by the Policy Exchange sets out some of the key issues with the fragmentation of vaccine data in England, driven in part by a lack of interoperability between systems and an inability to extract useful data to aid decision making.<sup>16</sup> There are also challenges with regards to using the digital technology we now have at our fingertips in other areas to aid efforts in vaccination uptake and outreach.

### Enablers

The NHS Vaccination Strategy proposes practical solutions in the use of technology to make vaccination more accessible to the public and increase uptake. We support the drive within the NHS Vaccination Strategy to better collect and use data to aid decision-making and to use digital technology to make vaccination more accessible to the public. We view the implementation of the

Strategy as a key enabler in this area.<sup>17</sup> The government should also expedite its commitment to digitising the *Red Book*.

#### Q4. What does your organisation see as the biggest challenges and enablers to spotting illnesses earlier and tackling the causes of ill health?

##### **Vaccination deployment and delivery**

###### **Challenges**

We have already outlined the challenges associated with stagnant and falling uptake of vaccinations. Despite the government's increased focus on prevention as core to improving the health of the UK population, reducing pressure on the NHS, and increasing economic productivity, there has been little detail shared to date on driving forward the recently launched NHS Vaccination Strategy. If the government is truly serious about prevention as critical to UK healthcare, then further tangible and explicit support for the Strategy and commitment to driving it forward must be prioritised.

###### **Enablers**

In the area of deployment and delivery of the current UK vaccination schedule, we view the implementation of the NHS Vaccination Strategy as the primary critical enabler. In order to reach the health inclusion groups and underserved communities for which vaccination uptake is often currently lower than the general population, there must be adequate resourcing to provide the necessary outreach<sup>18</sup>. There should also be an additional drive to ensure that people who are immune-vulnerable can benefit from vaccination in a timely manner according to their clinical need.

##### **Research and development for vaccination and immune therapies**

Although we have a robust vaccination programme in place in the UK, protecting the population against a number of infectious diseases, we could go much further. There is exciting work underway to both develop vaccines for additional infectious diseases, and also in developing new vaccines for infectious diseases we already vaccinate against - in order to increase efficacy or tolerability in different groups, such as those who are immune vulnerable.<sup>19</sup>

It should also be highlighted that there are many exciting and potentially transformational immune therapies in the pipeline, which could provide a step change in our ability in the coming years to prevent or treat some of our most prevalent health conditions causing the most harm to our population, and the biggest operational and economic burden to the NHS, such as cancer and Alzheimer's.<sup>20,21</sup>

###### **Challenges**

Within research and development, challenges include a lack of clarity on laboratory evidence needed in the development of vaccines, and a lack of guidance on the standardisation of assays to measure immunogenicity. As with deployment efforts, there is also huge scope to enhance

inclusion within vaccine research and development across health inclusion groups, and more to be done to help standardise the approach to this. Furthermore, and of critical importance to long-term planning for the NHS, is the vital importance of increased support needed for clinical trials within our healthcare settings.

### **Enablers**

The BSI's 2022 *Measuring Vaccine-Induced Immunogenicity* policy report lays out a comprehensive set of recommendations which should be implemented to realise the huge gains that can be made in this area.<sup>22</sup>

We also view government support for the Vaccine Innovation Pathway<sup>23</sup> and implementation of the recommendations of the 2023 *Lord O Shaughnessy review*<sup>24</sup> as key enablers on prevention. The UK leads the world for the quality of our immunology research and ensuring our researchers have the infrastructure in place to carry out these complex vaccine studies, including clinical trials and human infection challenge studies, benefits the UK both economically and in public health terms.<sup>25</sup>

Additionally, during Covid-19 pandemic, many research projects were set up which followed cohorts of healthcare workers over the long-term and were able to assess their immune responses both to infection and vaccination. Studies include SIREN (SARS-CoV-2 immunity and reinfection evaluation) and PITCH (Protective Immunity from T cells to Covid-19 in Health workers).<sup>26, 27</sup> Actively involving healthcare workers in this type of research and the long-term nature of these cohorts continue to be invaluable in building understanding around vaccine effectiveness as well as providing a surveillance mechanism for detection of emerging new variants and other respiratory viruses. This type of long-term cohort is rare and funding should be provided to continue these valuable research effort for the benefit of public health.

**Q5. Please share specific policy ideas for change. Please include how you would prioritise these and what timeframe you would expect to see this delivered in.**

### **Catalysing implementation of the NHS Vaccination Strategy (long term, with some short term interventions)**

The publication of the NHS Vaccination Strategy in 2023 was a huge milestone in bringing vaccination to the forefront of the public health agenda. If the government is truly serious about sickness to prevention, vaccination is absolutely core to this mission, and the implementation of this strategy should form a critical element of its wider 10-year plan.

Within the NHS Vaccination Strategy, responsibility for vaccination commissioning is due to be delegated to ICBs over the next two years. Whilst devolved commissioning for vaccination and immunisation presents many opportunities, ICBs have been asked to take this on largely without additional funding. Given the comprehensive approach needed to reach underserved communities with the lowest rates of vaccination uptake, and the current huge pressures on primary care, improving uptake under ICB leadership and with a growing vaccination schedule is a big ask and

national support should be adequately resourced for this. There should also be guidance issued to regional teams and ICBs on how existing contracts can be flexed to support NHS Vaccination Strategy implementation, particularly looking ahead to delegation of commissioning (and as national solutions to redesign commissioning and contracting are developed).

We would also recommend the NHS Vaccination Strategy has further review points added into its programme to understand how it is meeting its commitments, as well as a formal review at the end of the strategy lifecycle to inform future strategic direction and priorities.

### **1. Digitising the Red Book (short/medium term)**

Government should expedite its commitment to digitising the Red Book to provide easier access to an accurate record of the child's health for both parents and healthcare professionals, and help ensure access to vaccinations and other key health interventions or check-ups.

### **2. Supporting immune-vulnerable groups through flexibility in vaccination provision (short/medium term)**

The importance of identifying and protecting immune-vulnerable groups came to the fore during the Covid-19 pandemic,<sup>28</sup> with many lessons were learnt around how to facilitate this and which groups were most affected. However more research is needed in relation to other vaccines within the routine schedule (particularly the 'live' vaccines such as MMR) to more accurately identify which immune vulnerable patients should be able to access vaccination, at which timepoint, and through which service.

There is expert consensus on a national level challenge for clinicians in providing 'catch-up' or 'booster' vaccinations to immune-vulnerable patients outside of schedule (for example during an outbreak, pre-immunotherapy, or post-transplant), due to trusts' lack of contracted funding to do so, and a perceived lack of clarity on whether GPs are expected to provide these vaccinations, despite inclusion in national guidance that GPs can be reimbursed for providing this vaccinations when there is a clinical need.<sup>29</sup> For these patients, missed vaccinations could mean severe disease and potentially costly hospital admissions.

A 10-year plan for health should support flexible vaccination services and recognise the damaging effects of unclear contracting mechanisms and local and national policy on the provision of vaccination for immune-vulnerable groups. We would want to see NHS trusts and general practice supported in offering vaccinations outside of schedule where needed, and instead of trusts incurring punitive financial consequences – are actively supported in doing so.

### **3. Bolstering efforts on vaccine research and development and continued support for the Vaccine Innovation Pathway (short and medium term)**

While the BSI welcomes the publication of the first NHS Vaccination Strategy, the strategy alone will not fix every challenge in delivering crucial vaccines to our population. As the NHS Vaccination Strategy focuses mainly, and rightly, on vaccine deployment, research and development is of equal importance.

The Vaccine Innovation Pathway is an initiative with huge potential to transform the process for vaccine research and development in the UK, and to address some of the issues above, in addition to the recommendations within the Lord O'Shaughnessy Review.<sup>30</sup> The 10-year plan should continue to support the Vaccine Innovation Pathway, and prioritise any future resourcing the initiative may need to continue its transformative work.

<sup>1</sup> Royal College of Physicians (2024). *Inequalities in Health Alliance*.

<sup>2</sup> World Health Organization (2024). *Vaccines and Immunization*.

<sup>3</sup> Ghebrehewet, S *et al.* (2016). The economic cost of measles: Healthcare, public health and societal costs of the 2012–13 outbreak in Merseyside, UK. *Vaccine* 34: 1823–1831 doi:

<https://doi.org/10.1016/j.vaccine.2016.02.029>

<sup>4</sup> UK Department of Health & Social Care (2018). *Prevention is better than cure: Our vision to help you live well for longer*.

<sup>5</sup> Association of British Pharmaceutical Industry (2024). *Economic and societal impacts of vaccines*.

<sup>6</sup> UK Department of Health & Social Care (2022). *UK cements 10-year-partnership with Moderna in major boost for vaccines and research*.

<sup>7</sup> UK Department of Health & Social Care (2023). *New partnership to boost research into vaccines for cancer*.

<sup>8</sup> Landeiro, F. *et al.* (2024). The economic burden of cancer, coronary heart disease, dementia, and stroke in England in 2018, with projection to 2050: an evaluation of two cohort studies. *The Lancet Healthy Longevity* 5: E514–E521. doi: [10.1016/S2666-7568\(24\)00108-9](https://doi.org/10.1016/S2666-7568(24)00108-9)

<sup>9</sup> NHS England (2024). *NHS launches catch-up campaign for missed MMR vaccines*.

<sup>10</sup> UK Department of Health & Social Care (2024). *Fingertips: Public Health Profiles*.

<sup>11</sup> NHS Digital (2024). *Childhood Vaccination Coverage Statistics, England, 2023-24*.

<sup>12</sup> UK Health Security Agency (2023). *Vaccine update: issue 342, September 2023, flu special edition*.

<sup>13</sup> Andrews, N. *et al.* (2024). The impact of COVID-19 vaccine spring boosters on COVID-19 hospital admissions in England 2022/23. *Journal of Infection* 89: 106221. Doi: [10.1016/j.jinf.2024.106221](https://doi.org/10.1016/j.jinf.2024.106221)

<sup>14</sup> Cornforth *et al.* (2023). Impact of COVID-19 vaccination on COVID-19 hospital admissions in England during 2021: an observational study. *Journal of the Royal Society of Medicine* 116: 167–176. Doi: [10.1177/01410768231157017](https://doi.org/10.1177/01410768231157017)

<sup>15</sup> Bailey, S. & West, M. (2021). *Naming the issue: chronic excessive workload in the NHS*. The Kings Fund.

<sup>16</sup> Ede, R. *et al.* (2022). *A Fresh Shot: The future for vaccines policy in England*. Policy Exchange.

<sup>17</sup> NHS England (2023). *NHS Vaccination Strategy*.

<sup>18</sup> Aguilar Perez F. *et al.* (2024). *Building a path to trust: Parents, carers, communities and healthcare professionals' experiences of the children's vaccine programme*. Royal Society for Public Health.

<sup>19</sup> Association of British Pharmaceutical Industry, Vaccine Europe (2024). *Vaccines Europe pipeline review 2023 - UK edition*.

<sup>20</sup> Cancer Research Horizons (2024). *Our pipeline*.

<sup>21</sup> Cummings, J. *et al.* (2024). Alzheimer's disease drug development pipeline: 2024. *Alzheimer's & Dementia: Translational Research and Clinical Interventions*. Doi: <https://doi.org/10.1002/trc2.12465>

<sup>22</sup> British Society for Immunology (2023). *Measuring Vaccine-Induced Immunogenicity: Leveraging a Covid-19 legacy for improved public health*.

<sup>23</sup> National Institute for Health Research (2024). *UK Vaccine Innovation Pathway*.

<sup>24</sup> UK Department of Health & Social Care *et al.* (2023) *Commercial clinical trials in the UK: the Lord O'Shaughnessy review*.

<sup>25</sup> British Society for Immunology (2020). *Protecting the world: Celebrating 200 years of UK vaccine research*.

<sup>26</sup> UK Health Security Agency (2022). *SIREN study*.

<sup>27</sup> University of Oxford *et al.* *PITCH study*.

<sup>28</sup> UK Department of Health & Social Care *et al.* (2024). *COVID-19: guidance for people whose immune system means they are at higher risk*.

<sup>29</sup> National Health Service, England (2024). *General Medical Services Statement of Financial Entitlements Directions 2024*.

<sup>30</sup> UK Department of Health & Social Care *et al.* (2023) *Commercial clinical trials in the UK: the Lord O'Shaughnessy review*.