

**BSI Response to APPG on Vaccinations for All Call For Evidence on Vaccine Uptake**

British Society for Immunology

As an organisation, the British Society for Immunology, the largest immunological society in Europe, represents over 3,700 immunologists working in academia, clinical medicine and industry. Our objective is to promote and support excellence in research, scholarship and clinical practice in immunology for the benefit of human and animal health.

1. What are the key reasons some parents choose not to vaccinate their children?

1. The British Society for Immunology (BSI) broadly agrees with the World Health Organization's view that the reasons that parents choose not to vaccinate their children may be categorised using the '3Cs' – complacency, confidence, and convenience<sup>i</sup>. Internationally there are a broad number of reasons for low vaccination uptake, but in the United Kingdom, our experience is that, despite popularity as a media topic, vaccine disinformation, e.g. through social media, has not had a major effect on parents' confidence in vaccinations. This is borne out through the *Wellcome Global Monitor 2018*, in which 89% of British people surveyed said that vaccines are important for children to have<sup>ii</sup>, and the 2019 *Moving The Needle* report by the Royal Society for Public Health, which stated that 91% parents agreed that vaccines are important for their children's health<sup>iii</sup>. Public Health England research too shows that health professionals are the most trusted source of immunisation advice for parents, and social media the least<sup>iv</sup>.

2. Instead, many reasons witnessed by the BSI are encapsulated by the more banal issue of convenience, which would not produce the same effect as headlines on 'anti-vaxxers'. These issues of convenience can, for example, include lack of childcare for other siblings during immunisation appointments; few or no bus routes to the health centre/GP surgery; lack of vaccination provision in a community setting, e.g. schools; or (in London especially) moving about too much to receive reminders through the post. There also needs to be adequate provision of funding for services to achieve a reduction in these barriers. There is also an element of complacency, with vaccination programmes as victims of their own achievement. It is because of their extremely successful efforts in reducing the disease prevalence, that without seeing the deaths and life changing effects that these illnesses have, parents in high income countries can become complacent<sup>v</sup>.

2. What impact (current and future) does confidence in vaccines have on vaccine acceptance and uptake?

3. Confidence in vaccines has varying effects upon vaccine acceptance and uptake, and it is important that governments and societies communicate positively about vaccination, seeing it as a public health priority. The Wellcome Trust's June 2019 survey found that France had the least confidence in vaccines out of any country<sup>vi</sup>. This may be linked to the French Government's handling of the 2009 flu pandemic and the possible influence of pharmaceutical companies in this<sup>vii</sup>. Japan reported a similar phenomenon but linked to the HPV vaccine that was rolled out with a background of media reports about possible adverse effects, leading to the Japanese

government's decision to suspend this pending investigation<sup>viii</sup>. Rather than assuage fears, this move fuelled the public's suspicions that this vaccine is not safe. These confidence issues have combined with an uncomprehensive national vaccination policy to have ramifications for Japanese public health<sup>ix</sup>. As mentioned in our response to question 1, it is predominantly issues other than confidence affecting the UK.

4. There is no doubt however, that in some other countries, vaccine confidence is linked to vaccine uptake, sometimes in specific vaccines; generally speaking, the reasons for lowered vaccine confidence is something unique to that nation and perhaps even culture. To paraphrase Tolstoy's *Anna Karenina*, all vaccine confident countries are alike, each vaccine unconfident country is unconfident in its own way. There is no panacea for increasing vaccine confidence across the board in all countries, but instead it is an issue that must be tackled individually in each nation.

3. What can be done to support an increase in uptake of vaccines and access to wider health services?

5. The BSI has made a number of recommendations to policymakers in the UK for increasing the uptake of vaccines. Turning around this gradual decline in vaccination coverage will likely involve: (1) more accessible services and more active outreach by health professionals into individual communities that are undervaccinated; (2) the wider provision of vaccination services, e.g. school visits by community nurses and/or mobile vaccination services; (3) better training of health professionals on what vaccines are, what vaccines do, how they work and what is in them, so that they are more equipped to answer parents' questions; (4) increasing public awareness of the benefits that vaccination confers and the danger that the return of vaccine preventable diseases poses; (5) provision of the right public health funding for vaccination services to function effectively, including provision for reaching under-vaccinated groups which costs more than standard provision, and funding communications to parents to improve their access to evidence based information; and (6) reverse the decommissioning of local immunisation co-ordinator posts.

4. Should compulsory vaccinations be considered/continue in your region/country of expertise?

6. The BSI does not believe that a policy of compulsory vaccination is conducive to long term vaccine confidence, nor beneficial overall to the public health situation in the UK. Here, socioeconomically disadvantaged groups are most likely to be under-vaccinated<sup>x</sup>; the corollary of this being that mandatory vaccination has the capacity to increase inequities because the penalties of non-compliance can disproportionately fall upon these groups<sup>xi</sup>. There is evidence from an Australian study that mandating vaccination galvanised anti-vax support amongst parents refusing to immunise their children<sup>xii</sup>. Over half of those surveyed planned to get more involved in protest action if the government instigated further measures along the lines of the 'No Jab, No Pay' policy under which government assistance is not paid to parents who refuse to vaccinate. Rather than penalising parents, it would be more effective in most cases to offer a programme of engagement with health professionals around why vaccines are important and how they work.

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7. The goal of a mandate for vaccinations would be to increase vaccination coverage. If we rule out non-payment of tax credits, child benefit etc. because it would further deepen the socioeconomic disadvantage that precipitates non-vaccination, and discount the use of incarceration as few politicians would be willing to wield this as a penalty, we are left with mandatory vaccination before school entry. Professor David Salisbury, former Director of Immunisation at the Department for Health, argued against this pointing out that between 1998 and 2010 the peak age for measles cases in England and Wales was less than five years, meaning that if vaccinations were made mandatory for school entry, the law would come into effect after many infections had occurred<sup>xiii</sup>.

8. The effectiveness of mandatory vaccinations in the UK in increasing vaccination coverage is difficult to evaluate because of different penalties, e.g. barrier to school entry, fines, non-payment of child tax credits, or incarceration, being used in different countries and cultures, and because of the different range of exemptions available in each, e.g. medical, religious, and/or philosophical. Comparing like for like is therefore too difficult when applying other country's systems to the UK as there are too many variables; vaccination policy must be supported by evidence, and in this case there is no evidence to support compulsory vaccination.

9. If a mandate were to be introduced however, evidence is clear that this should not be selective. France introduced its first mandate in 1938 (diphtheria), but chose to stop mandating vaccinations after 1964 (poliomyelitis) because it was considered that, unlike the first three, there were no geographic, financial, or sociological barriers to these newer vaccinations. The later additions to the vaccination schedule were deemed only 'recommended'<sup>xiv</sup>. This led to a two tier system in which the public perceived the recommended vaccinations as less important than the mandatory ones; thus in 2018, the mandate was extended to cover all vaccinations to reduce the coverage gap, which was sometimes as much as 20%<sup>xv</sup>.

5. What role can health workers, NGOs and community groups have in increasing uptake of vaccines?

10. Health workers play a vital role in increasing rates of vaccination coverage from being on the frontline delivering vaccines to back office roles like developing public health strategies, and are the most trusted source on immunisation advice by UK parents<sup>xvi</sup>. The value that all these roles can bring to reverse the trend of declining coverage is not always appreciated or considered in wider reforms and reorganisation of the health system. A study has shown that the Health and Social Care Act 2012 had unintended consequences for immunisation in England, and was responsible for a loss of institutional memory and a loss of core roles such as Primary Care Trust (PCT) immunisation co-ordinators who mounted local campaigns, provided training for staff involved with immunisation and coordinated the work of all those involved in immunisation. The loss of these posts occurred as the responsibility for commissioning shifted away from PCTs meaning the absence of a focal reference point for providers and performance evaluation becoming more challenging<sup>xvii</sup>. It also meant the loss of health professionals who had built long term relationships with specific communities and in doing so successfully increased vaccination coverage<sup>xviii</sup>. Any future reorganisation of our healthcare system must learn these lessons.

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11. NGOs and community groups can play a supporting role in increasing vaccine uptake. This is evident in low- and middle-income countries from the work that organisations like Gavi, The Vaccine Alliance, do. They have immunised over 700 million children worldwide since 2000 and prevented an estimated 10 million deaths<sup>xix</sup>. Opportunities for NGOs and community groups in high income countries, such as the UK, exist too. Community groups, such as parent and toddler groups, can publicise the need for children to receive their routine immunisations and encourage parents to speak to their GP; they can also work with local health services to run mobile vaccination services. The British Society for Immunology, a learned society, produce a [vaccine guide](#) as a ‘mythbuster’ to publicise the benefits of vaccines and to answer frequently asked questions, and is working with medical practitioners directly to share expertise on vaccines and increasing their uptake.

6. What are the health risks if childhood vaccination rates fall?

12. The most obvious risk to health in the UK will be the return of childhood diseases not associated with the 21<sup>st</sup> century. The polio vaccine is estimated to have saved 10,000 lives between 1958 and 2018, the measles vaccine saw cases reduced from over 400,000 per year in 1948 to less than 1% of that number today<sup>xx</sup>, the pertussis vaccine has reduced 1,000 deaths per year to an average of 3 today, and the diphtheria vaccine reduced the number of annual deaths from 3,500 to an average of 0 today<sup>xxi</sup>. The return of these diseases, even partially, would be devastating to the nation’s health due to the number of deaths and the lifelong effects that these diseases can have through disability, which in turn have long term social and economic costs, both to healthcare systems and families. Conversely, the ultimate goal of increasing vaccination uptake is of course, to eliminate these diseases entirely<sup>xxii</sup>.

13. Vaccines have a role to play in preventing cancer too, as the success of the HPV vaccine has shown with a decrease in HPV infection and precancerous cells leading to hopes that cervical cancer can be eliminated or severely reduced<sup>xxiii</sup>. The Government has also made vaccines a pillar in its strategy to combat antimicrobial resistance<sup>xxiv</sup>, with a reduction in the diseases they protect against, as well as secondary infections, having a consequent effect of reducing antibiotic use.

14. Measles has been described the ‘canary in the coal mine’ for detecting problems with immunisation programmes<sup>xxv</sup>. An increase in measles cases warns of an increase in the other vaccine-preventable diseases, should the decrease in vaccine uptake not be reversed. In that light, the almost fourfold increase in confirmed measles cases in England in 2018, compared with 2017, and similar rises in the USA and much of western Europe, should be more worrying than ever. Indeed, in England, the first quarter of 2019 saw a fourfold increase in mumps compared with the previous period in 2018<sup>xxvi</sup>.

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<sup>i</sup> [WHO, Report of the SAGE Working Group on Vaccine Hesitancy, October 2014](#)

<sup>ii</sup> [Wellcome Global Monitor 2018; Datasets and crosstabs for all countries; June 2019](#)

<sup>iii</sup> [Royal Society for Public Health; Moving the Needle, Promoting vaccination uptake across the life course, January 2019](#)

<sup>iv</sup> [Public Health England, Vaccine update Issue 294, May 2019](#)

<sup>v</sup> [Independent, Global health chief warns ‘Whole Foods mums’ over MMR vaccine, September 2017](#)

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- vi [Wellcome Global Monitor 2018; January 2019](#)
- vii [Eurosurveillance, Dramatic change in public attitudes towards vaccination during the 2009 influenza A\(H1N1\) pandemic in France](#)
- viii [Expert Review of Vaccines, HPV vaccination in Japan: what is happening in Japan?, 2019](#)
- ix [Japan Times, Japan's backwards vaccination policy, June 2018](#)
- x [NICE, Immunisations: reducing differences in uptake in under 19s, September 2017](#)
- xi [Nature, Mandate vaccination with care, 2019](#)
- xii [Journal of Public Health Medicine 39\(2\):156-169, 'It just forces hardship': impacts of government financial payments on non-vaccinating parents, 2018](#)
- xiii [BMJ, Should childhood vaccination be mandatory? No, 2012](#)
- xiv [Eurosurveillance, Extension of French vaccination mandates: from the recommendation of the Steering Committee of the Citizen Consultation on Vaccination to the law, 2018](#)
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- xvii [BMC Health Services Research, "It's a complex mesh" - how large-scale health system reorganisation affected the delivery of the immunisation programme in England: a qualitative study](#)
- xviii [Jewish Chronicle, Children at risk as Charedi parents say no to vaccinations, January 2017](#)
- xix [Gavi, Gavi's mission](#)
- xx [Office of Health Economics, The Impact of New Medicines in the NHS: 70 Years of Innovation, August 2018](#)
- xxi [Vaccine Knowledge Project, 6-in-1 Vaccine](#)
- xxii [Public Health England, UK Measles and Rubella elimination strategy, 2019](#)
- xxiii [NHS, Success of HPV vaccine could lead to end of cervical cancer, June 2019](#)
- xxiv [HM Government, Tackling antimicrobial resistance 2019-2024, January 2019](#)
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- xxvi [Public Health England; Research and analysis, Mumps: notifications and confirmed cases by oral fluid testing in England, 2013 to 2019 by quarter; July 2019](#)

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