

Response to the All-Party Parliamentary Group on vaccinations for all: Inquiry into vaccine confidence in high income countries

1. Meningitis Research Foundation (MRF) is a leading national and international charity that brings together people and expertise to defeat meningitis and septicaemia wherever it exists.
2. Our vision is a world free from meningitis. This can be achieved in part by ensuring effective vaccinations can protect everyone.

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

3. It is important not to overstate the issue of vaccine hesitancy because there are other reasons why people don't get vaccinated [1]. Periodic parental attitude surveys in England show that vaccine confidence amongst parents is high. Parents actively deliberating the pros and cons of vaccination has also decreased over time showing that getting vaccinated is something a large majority of parents doing so unquestioningly [2]. Despite this, UK uptake of childhood immunisations has been steadily declining for 5 years running[3] suggesting there are other factors other than vaccine confidence influencing parental decisions about whether to vaccinate. Access related issues and operational activity within primary care are considered by experts to be key reasons for this [4].
4. The reasons for parents choosing not to vaccinate their children are diverse and context specific, multifactorial and vary across vaccines, time and geography[5]. In many countries including the UK there are substantial differences in vaccine uptake relating to socioeconomic status, gender, ethnic group, geographic location and religious beliefs [6].
5. Particularly in high income countries vaccines have become a victim of their own success by reducing the prevalence of the diseases they protect against leading to a reduction in the perceived threat of disease and a willingness to accept the risk of refusing some, or all routinely available vaccines. As a patient group representing those who have been directly affected by meningitis, MRF often witnesses the benefit of using their stories to communicate with the public about the devastating effects of this largely vaccine-preventable disease and reminding people why vaccination is so important.
6. Global efforts to understand vaccine hesitancy include the WHO-SAGE vaccine hesitancy working group with the main outcome of being the Three C model which identifies complacency (lack of awareness, not perceiving disease as high risk and vaccination as necessary), a lack of confidence (lack of trust in safety and effectiveness of vaccines) and convenience issues (practical barriers and access issues) as root causes which impede vaccination[7]. Further work proposed a fourth "C", calculation, as the degree to which individuals weigh up the pros and cons of vaccinating as playing an important role in vaccine decision making. Additionally Thomson et al[8] suggested an alternative taxonomy known as the "the 5As", for describing key root causes behind poor vaccine uptake which largely overlaps with the root causes identified by the WHO-SAGE working group.

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

7. In Europe a number of countries have experienced a loss of confidence in certain vaccines in the past 20 years and in 2016 a global study on vaccine confidence found that vaccine scepticism was highest in Europe[9], a partial cause of recent measles outbreaks across the continent.
 - a. Are there societal factors and trends that can impact confidence in vaccination?
8. Yes. For example, a decrease in MMR vaccine uptake since 2012 in Italy was attributed to a decision taken by the Court of Justice of Rimini to award vaccine-injury compensation for a case

of autism leading to reduced vaccine confidence in the country. A significant inverse correlation was found between MMR vaccination coverage and internet search activity, suggesting that new media may have played a role in spreading mis-information[10].

- b. What is the relative importance of confidence as a reason for not having vaccines in relation to the other reasons people decide not to have vaccines?
9. Vaccine confidence has been shown to be a useful predictor of vaccine uptake and numerous measures primarily focusing on vaccine confidence have been constructed to assess the likelihood that people will vaccinate [11-16].
10. However, a recent systematic review of influenza vaccine hesitancy[17] showed that other factors (the previously described 4 Cs) are also important predictors of vaccination intention and behaviour. The relative importance of each of these issues can vary according to country and according to vaccine[18]. Evidence suggests that vaccine confidence is not the most important driver of decreasing vaccine uptake in the UK and that addressing some of the more practical aspects of immunisation might help increase uptake.

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

11. Initiatives which aim to increase uptake of vaccines need to be targeted interventions which address the reasons behind reduced vaccine uptake and these are context specific.
12. Keeping up to date and accurate health records and actively calling and recalling children who are eligible for vaccination into the GP surgery has been shown to be an effective way of increasing immunisation uptake rates. Delivering infant vaccines as part of local primary care service increases the opportunity for health professionals to interact with both parent and child and offer any other required medical intervention and so also brings with it wider health benefits.
13. The MenACWY vaccination programme in the UK has demonstrated that teenagers are much better targeted with vaccines whilst at school compared to GP surgeries. Additionally pop up clinics held at university registration led to higher uptake rates[19] emphasising that making immunisation as convenient as possible is important for increasing uptake. Making vaccine eligible groups aware that they are eligible for vaccination is also key as this was a major issue contributing to low uptake rates of the MenACWY catch programme in the UK.

a. Are there examples of successful initiatives or activities that have increased uptake of vaccinations?

14. There are numerous reviews that assess the effectiveness of interventions on vaccine uptake[6, 20-22]. Reminder based interventions, parent, community-wide and provider based education motivational interviewing[23, 24], pop-up clinics[25] and incentives have all been shown to have had a positive effect on vaccine uptake.
15. Patient groups also have a role to play. MRF's 'One life, one-shot' campaign won campaign of the year in the 2018 Third Sector Awards and demonstrated impact by increasing vaccination uptake rates of MenACWY amongst eligible young adults targeted by the vaccine.

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

16. MRF feel strongly that compulsory vaccination is not an appropriate solution for falling immunisation rates in the UK and that other more practical issues associated with improving access to vaccines should be addressed to deal with declining uptake rates which research suggests are largely convenience related.

17. Mandatory vaccination may backfire by increasing anger amongst individuals with pre-existing negative attitudes towards immunisation and potentially decreasing uptake of vaccines which are recommended but not mandatory[26]. The debate surrounding mandatory vaccination also generates media interest and potentially provides a stage for the anti-vaccine lobby.
18. There is evidence that mandatory vaccination in France and Italy has managed to increase uptake[27]. However 57% of responders to a French attitudinal survey considered the law to be authoritarian[28] and there continue to be ongoing debates in regions of Italy regarding perceived constraints to individual freedom[29]. Interestingly rates of non-mandatory vaccines since the laws were introduced have also increased to some extent however it is speculated that this is likely mostly due to dedicated efforts from both governments to conduct extensive information campaigns for the public and increased training for health professionals alongside implementing the new laws[29, 30]. It has also been found that making vaccines mandatory leads to improved vaccination services which would have also played a role in the increased vaccine uptake.
19. Making vaccination compulsory is not the only way to obtain high vaccination rates. For example Finland has achieved high vaccination uptake rates through comprehensive vaccination registries and recall systems alongside easy access to vaccines [27].

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

20. Patient groups can promote pro-vaccine messages and remind the public of the life-altering consequences of vaccine preventable disease using powerful real life experiences of the people they represent. MRF has an online book of experience which shares the experiences of those affected by the disease. In an environment where vaccine preventable diseases are ever rarer, understanding the effects of the illness can play an important role in increasing positive vaccine attitudes and research has also shown this to be the case [31].
21. MRF also has a helpline and social/digital media platforms which respond directly to vaccine queries from the public. We often talk to parents who are questioning the safety, efficacy or need for a particular vaccine that prevents meningitis and find that in the vast majority of cases after talking through their concerns these parents make a positive decision to vaccinate their child.
22. Research shows that the most trusted source of information about immunisations are health professionals [2]. Health care workers play a key role in discussing the efficacy and safety of immunisations with parents and adequate training for this group is essential. MRF have an extensive online information for the public and health professionals about both the disease and the vaccines which prevent it <https://www.meningitis.org/shop/products>. All information is created in collaboration with clinical experts in paediatrics, vaccinology and infectious disease.
 - a. What challenges might they face and what are the solutions?
23. Challenges may include having the expertise to accurately and confidently answer vaccine safety and efficacy questions from the public. A possible solution for this is to make available good quality accessible information about vaccine safety and efficacy which is specific to certain vaccines and the diseases that they protect against.
24. Other solutions could be to increase access to stories from people who have had direct experiences of vaccine preventable diseases and to increase the availability of accessible educational tools which explain about disease epidemiology and impact.
25. MRF has developed a Meningitis Progress Tracker <https://www.meningitis.org/our-strategy/what-we-do/action-and-support/global-data> which allows users across the globe to find out the burden of meningitis within their own country according to three specific vaccine preventable bacterial causes (meningococcal, pneumococcal and Hib). The tracker also allows the user to see how the introduction of vaccines has reduced disease incidence over time by country as well as sharing the extent to which healthy life is still lost to vaccine preventable meningitis each year and shares video experiences of those affected by the disease from different parts of the globe.

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

26. Falling immunisation rates could lead to widespread resurgence of disease even in age groups not targeted with the vaccine. Many immunisation programmes work by suppressing transmission of the bacteria amongst age groups most likely to harbour the bacteria therefore protecting the wider population, known as herd protection. If vaccination rates fall below a threshold level, transmission rises and disease comes back.
27. It has recently been recommended that the pneumococcal vaccination be reduced from 2+1 schedule to 1+1. This means that there will be a heavy reliance on high uptake rates of the booster dose to maintain herd protection. There is a high risk that in some areas with low uptake rates we will start to see pockets of disease start to resurge.
28. The sequelae from meningitis can be severe and diverse and the most severe outcomes can cost the government between £3 and £4.5 million over the lifetime of the person affected[32].
 - a. What impact could vaccines have if uptake increases?
 29. Vaccinations have far reaching benefits beyond simply the health gained by preventing vaccine preventable disease in the immunised individual[33] such as but not limited to:
 - a. Increased patient contact with health services
 - b. Maximum protection of the unimmunised through herd protection
 - c. Reduction of antibiotic resistant organisms
 - d. Alleviating pressure on health systems through outbreak prevention
 - e. Reduction of health inequalities
 - b. What potential role do vaccines have in tackling issues such as cancer or antibiotic resistance?
 30. Prevention through vaccination removes the need to treat disease with antibiotics. The pneumococcal vaccine in particular has been associated with a decline in disease associated with antibiotic resistant strains.

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