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# Children and Young People's attitudes towards vaccinations – what they know and what they have to say

A Royal Society for Public Health Report

March 2023

## Reference

This report should be referred as follows:

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## Royal Society for Public Health

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## Foreword

School nurses play a central role in the school-aged immunisation programme. They have a wealth of experience working with children and their communities, and have an in-depth understanding of their health needs. School nurses also support schools, training staff to better help children and young people.

School nurses' contribution in rolling out vaccines has had a positive legacy of high uptake rates, demonstrating how trusted they are by children and young people, and also how valued they are in the school system. It is heartening to see this is borne out in this research, and am so proud that children would go to school nurses for information about vaccines. This reflects the importance of the public health workforce in empowering young people to make health decisions.

It is also really reassuring to see that children and young people would feel encouraged to have a vaccine if they could have it at school. This shows how crucially positioned school nurses are and how vital they are for the improvement of vaccine uptake.

However, the system is stretched to capacity. Continuous real-term cuts to the public health grant have resulted in service cuts, and a worrying drop in the number of school nursing staff. With school nursing services being depleted by over 35% - making the delivery of such immunisation programmes a challenge, it is urgent that there is reinvestment.



Whilst there are many positive findings from this survey, we cannot ignore that many groups and communities are being left out of the vaccine conversation and this is resulting in their future health being compromised. Action is needed to support the workforce and also to demonstrate to school-aged children and their communities that we are listening.

Sharon White OBE.

Chief Executive Officer,

School and Public Health Nurses Association (SAPHNA)



## Executive Summary

Whilst overall, vaccination programmes work well in the UK, there are particular groups and communities who we know have concerns about vaccines, the vaccination system, and who are not being reached by traditional means.

**RSPH carried out new research – the first of its kind – which listened to children and young people’s perceptions, concerns and experiences of vaccines.**

Vaccines save lives and high uptake levels protect communities and people of all ages. Most vaccinations in the country are given to children and young people (CYP), however uptake is below the recommended levels in all four nations. Given this, and the impact that a decrease

in uptake could have on our nations’ future health, the RSPH carried out research with a sample of CYP from across the UK to understand their experiences, perceptions and attitudes towards vaccines.

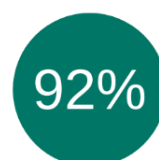
This is the first time that CYP have been asked about their views and have had a chance to share what they think about vaccines, what they know about them, and where they get information from, alongside their fears and concerns. We partnered with Dubit, a specialist children and young people research agency, to conduct qualitative and quantitative research with CYP.

### The majority think vaccines are important to their health and trust them

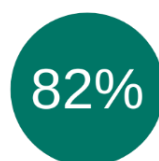
It is very positive that 9 in 10 CYP think that vaccines are important to their health and 8 in 10 trust them. However, these numbers vary by nation and ethnicity. Approximately 3 in 5 correctly identified how vaccines work in our bodies, and this knowledge increased with age.

CYP know that there are vaccines for polio (73%), tetanus (74%) and measles(76%). Numbers are much higher for flu (89%) and Covid-19 (98%), but considerably lower for HPV (52%) and meningitis (57%). This is of particular interest as the participants are in the age group that will or have already been offered an HPV vaccine.

Other findings are cause for concern and highlight where action is needed. Knowing that a vaccine exists does not automatically translate into knowledge that it is available to them. For example,



think vaccines are important to their health



trust vaccines



understand what vaccines do and how they work

even though 98% know that there is a vaccine for Covid-19, only 84% knew they could have it. The gap is also significant for HPV: 52% know the

vaccine exists, but only 39% know it is available to them.

### Sources of information

Websites are where most CYP (92%) go to when looking for information about vaccines, with the majority accessing the NHS website (75%). This was positive as the NHS is an official source of information, which is regularly reviewed. Half (49%) said they access information via social media, with Tik Tok and Instagram ranking first (29%) and second (26%). Whilst this may be a concern given reliable information can be harder to manage on social media, it is overall a positive that CYP are accessing information.

With offline resources, parents were the go-to person for vaccine information. GPs and school nurses follow, but this differs with ethnicity, for example, black children are more likely to go to their close friends for information than they are to ask school nurses.

### Factors encouraging them to have a vaccine

When asked about what would encourage them to have a vaccine, answers showed that trust and a sense of community play a role. Being given information by someone they trust was the number one reason (71%), followed by seeing people they trust having it too (68%) and finally being told it will protect others (65%). More than half said that being able to have it near their homes or at school would also encourage them to have a vaccine (55% and 53% respectively).

### Decision-making process

Over half (56%) think that the decision to have a vaccine should be made jointly with their parents. This also varied with ethnicity, with 58% of young white people saying they want to share this decision with their parents, compared with 46% of their Asian peers. This highlights the potential influence that parents have and how they play a role in supporting children with their vaccination.

### General concerns

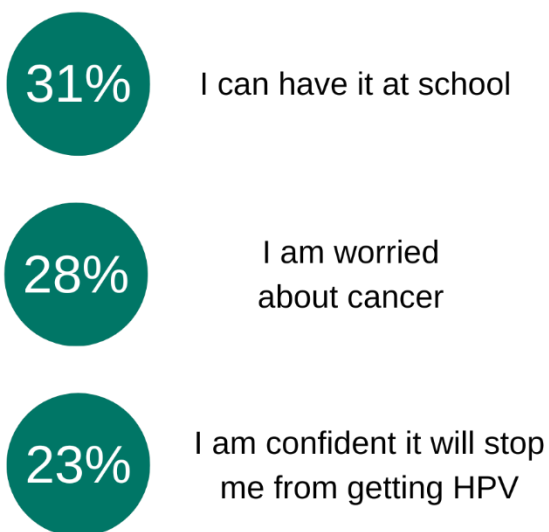
CYP have personal concerns of their own as well. Three in five worry about side effects, and more than half worry about vaccine safety. Pain troubles this group, with 55% worried that it will hurt, and many reporting a fear of needles. CYP from Asian, black and mixed-race backgrounds are more worried about the potential costs of vaccines than their white peers, indicating that currently available information may not be suitably designed and disseminated for all audiences.

### HPV vaccine

RSPH analysed attitudes and perceptions of the HPV vaccine because of its impact on HPV-related cancer elimination and falling uptake. Some boys reported not being aware that they were entitled to having the vaccines. Only 55% of 12-to-16-year olds said they had heard about the HPV vaccine, and even less (45%) remember being offered the vaccine. However, approximately 8 in 10 of 12-16-year-olds reported having the vaccine when it was offered.



## CYP would have the HPV vaccine because:



Among the group of CYP who have not yet been offered the HPV vaccine or have declined it, 30% said they would not have the vaccine because they do not know enough about HPV or about the HPV vaccine. On the other hand, 31% of 11-16-year-olds who have had, will have, or are unsure about having the vaccine explicitly said being able to have the vaccine at school encourages them to take it.

Whilst not necessarily a surprise, few CYP understand how vaccines are developed, with only 1 in 5 being able to correctly identify their development process. This does not seem to affect their knowledge of how vaccines work and their trust in this medicine.

## Policy recommendations

### 1. Stakeholders (behaviour change experts, information and education specialists) should make clear and age-appropriate information available for CYP.

This should address concerns about side effects and safety, and boost knowledge about diseases.

### 2. There needs to be a joined-up, collective effort to increase awareness of which vaccines are available to CYP.

Given the range of ways CYP find information, this would include a variety of key organisations and professionals including schools, the public health workforce, and social media companies. Young Health Champions, who are part of communities, could also play a key role in developing and communicating information to the right people in the right way.

### 3. Parents should be supported and have access to trustworthy information.

CYP told us that parents are their “go-to” person. We must help parents

and families with the right information and approaches to discussing vaccines, so they feel reassured when supporting their own child.

### 4. We must develop a tailored strategy to deliver information and vaccines to CYP with black, Asian or mixed ethnicity, and those living in areas where uptake is low.

We know that public health interventions work well at the local level. These should be led by the needs of groups and communities and include bespoke interventions, tailored to local needs and draw on previous successful vaccine programmes.

### 5. Schools, including school nurses, teachers and local community groups must be further supported, so they can better help CYP and parents.

Schools are at the heart of immunisation programmes. Proper funding is essential, so that schools are adequately supported with vaccine programmes.



**6. Increase the numbers of the public health workforce and provide them with proper funding and support, so they can help children and families.** It is not just school nurses who provide public health support – there are a range of

vaccine specialists and support workers who lead in this area. The right funding, budgetary prediction, and support are needed so that excellent services can be developed and delivered, and the workforce can grow.

## Introduction

Vaccines save millions of lives every year. They reduce the risk of getting diseases and prevent over 20 life-threatening illnesses. Vaccines have helped us live healthier lives. (1)

Most vaccinations on the UK's routine immunisation schedule are given to babies, children, and young people between 8 weeks and 14 years of age. Of the 21 vaccines people are expected to have during their lives, 18 are supposed to be administered before the age of 16. (2) Children and young people (CYP) from the age of 11 to 16 are currently offered four vaccines:

- HPV offers protection against the Human Papilloma Virus
- MenACWY protects against meningitis and blood poisoning
- 3-in-1 teenager booster offers protection against tetanus, diphtheria and polio
- Covid-19. (2)

Uptake for teenage vaccines is currently below optimum across all four nations. This could have a negative impact on the future health status of the UK, increasing the risk of outbreaks of deadly diseases such as meningitis and measles. For some vaccines, such as HPV, uptake has consistently been lower in CYP from different ethnic groups. (3) Evidence shows that other infant immunisations uptake is also lower among individuals from black, Asian and other ethnic backgrounds. (4) Overall, we are struggling to return to pre-Covid-19 levels of vaccine uptake.

Several factors can influence vaccine uptake. Some are practical, such as location of clinics, their distance from homes and public transportation affordability, others are about perceptions and emotions, such as concerns about

side effects and fear. (5) General attitudes, for example confidence in the value of vaccines and thinking they are important, also influence uptake.

Whilst study of the influence of attitudes and perceptions of vaccines on uptake in the literature is not new, (5,6) this is unique research as it is the first nationally representative study of CYP with their views and thoughts. Research with CYP to date has either focussed on the impact of educational interventions on adolescents' perceptions, (7,8,9) or knowledge and attitudes about HPV vaccines with relatively small samples. (10,11) In addition, there have been literature reviews, (12,13,14) and analyses looking into parents, caregivers or healthcare professionals' perceptions of vaccines offered to children. (15,16,17)

This report sets out the findings of the research: CYP told us what they think about vaccines, their concerns, their knowledge about them, and how they obtain information. This evidence is crucial for the formulation of recommendations and policies that will help us to better understand, inform and support children, parents, community leaders and other stakeholders on vaccine concerns and uptake.

In this report we will explore:

- Awareness of vaccinations
- Confidence in vaccines development
- Views on who the decision maker should be
- Attitudes and understanding of different vaccines including flu, HPV, Covid-19, and infant immunisations.

## Methods

For this study, RSPH partnered with Dubit, a specialist children and youth research agency with over 20 years of experience. The research was carried out in two stages: 1) qualitative research with CYP to ensure we were asking the right survey questions in the right way (and giving us additional insight into their views), 2) the quantitative survey itself.

Survey questions were drafted by RSPH policy team, and were tested by Dubit in three online focus groups with 24 children representative for age and gender (11-12, 13-14 and 15-16 years old). This was carried out online in The Clickroom, Dubit's award-winning virtual focus group facility. The groups gave feedback on the survey questions, identifying unfamiliar words and concepts, and pointing out what was missing as well as what was not needed.

Question-testing insight led to a child-friendly survey that took approximately 10 minutes to complete. A sample of 1,584 11-16-year-olds across all four UK

nations, nationally representative of age and gender was recruited. Parents and children received information about the research, what their participation would involve, how their data would be used, how they may withdraw from the research, and how they may complain about the study. We then obtained informed consent for the parent/caregiver for their child to participate, before asking their child for their informed consent. Children were signposted to information sources should they have any questions about the subject matter of the research. The survey was completed between 19-31 October 2022. Results were analysed using descriptive statistics and independent t-test. All quotes in the report are anonymised and come from the focus groups or comments given alongside survey responses.

Whilst the sample is representative of the UK as a whole, the sample size from Northern Ireland and CYP from black ethnicity is small (57 each). This survey is a snapshot of attitudes and experiences, trends have not been measured.

## “They are very important” – What CYP think about vaccines.

Children know vaccines are important to them. The majority of CYP have a positive perception of vaccines. However, this varies according to nation, ethnicity or level of trust in the vaccines. Children who have little or less trust in vaccines seem less likely to think they are important to their health.



of CYP think vaccines are important to their health

### Percentage of CYP who think vaccines are important by nation



Scotland



England



Wales



Northern Ireland



### Percentage of CYP who think vaccines are important according to level of trust

Trust	No trust
97%	70%

### Percentage of CYP who think vaccines are important by ethnicity

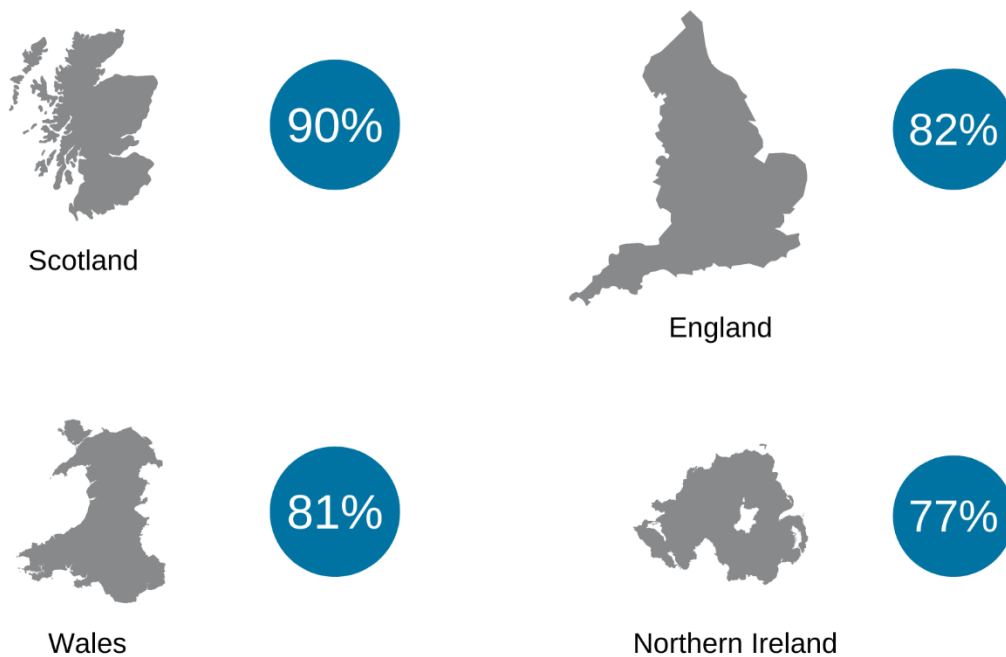
Asian	Black	Mixed	White
89%	81%	87%	93%



of CYP trust vaccines

The majority of CYP trust vaccines, but nearly 1 in 5 (18%) surveyed did not. Considering the recommended uptake of 95%, (18) and according to the WHO, the lack of trust affects uptake, (19) this is of concern and could lead to serious problems in the future. Scotland, the best-performing nation, may provide some answers that could support UK-wide vaccine trust. However, it must be noted that this survey report gives us baseline data, not trends over time.

Percentage of CYP who trust vaccines by nation



Percentage of CYP who trust vaccines by ethnicity

	Asian	Black	Mixed	White
Trust	71%	74%	74%	85%
Do not trust	29%	26%	26%	15%

The survey showed that knowledge of how vaccines are made does not influence trust. Of the children who said they know how vaccines are made, 85% trusted vaccines. Of those who reported not knowing how vaccines are made, 82% still said they trust them. This mirrors WHO's

model for vaccine hesitancy, which states that confidence, complacency and convenience are major influences for vaccine hesitancy, but knowledge of the development process itself has less of an impact. (19)

“

I think vaccines are a great thing and help save a lot of lives.

”

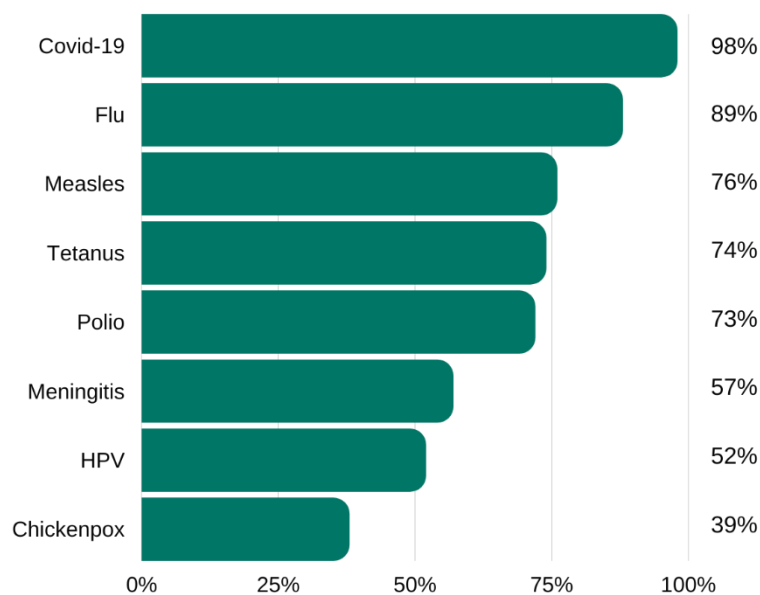


## What is available to me? - Confusion around available vaccines

Most participants are aware there are vaccines for diseases such as flu, polio, measles and tetanus. However, almost half of 11-16 year-olds do not know there are vaccines for meningitis or HPV (43% and 48% respectively). At this age range,

they should either have already been offered one or will be quite soon. This lack of awareness stood out as important and needs further exploration, for example, are 11-year-olds told about HPV differently or at all in the school setting?

### Percentage of CYP who think there is a vaccine for each one of the diseases below:



Source: Dubit/RSPH survey 2022.

Approximately 41% of CYP who have already been offered a HPV vaccine either do not know there is a vaccine for HPV, or do not think there is one.

HPV vaccine offer status		
	Pre-HPV vaccine offer	Post-HPV vaccine offer
There is a vaccine for this	29%	58%
There is no vaccine for this	6%	6%
I don't know	65%	35%

Awareness of a vaccine does not guarantee that CYP know they are available to them, despite being in the NHS vaccine schedule and offered to this age group. The knowledge gap exists even for Covid-19 vaccines, which

received considerable attention from the media. It would be interesting to further investigate how CYP learn about vaccines and are informed about the ones they are entitled to have.

### CYP awareness that vaccine exists versus awareness it is available

	Knows there is a vaccine for this	Knows a vaccine is available to them
<b>Covid 19</b>	98%	84%
<b>HPV</b>	52%	39%
<b>Meningitis</b>	57%	38%

Do you know what vaccines you might be offered in the next couple of years?"

“Flu, that's it.”

Understanding of vaccine availability varied according to ethnicity. Less than 1 in 3 children with an Asian or black background knew that HPV vaccines are available to them (28% and 30% respectively), and they were also less likely to know that they could have Covid-19 vaccines (79% and 68% respectively). Further work is needed to find out why CYP from these groups appear to know

less about what vaccines are available and what is causing this knowledge difference. For example what can be done to close the gap (13%) between Asian and white peers knowledge of the HPV vaccine? Without exploring these issues in more depth, we risk cutting whole swathes of CYP out of vaccines conversations and putting their future health on the line.

### Awareness of vaccine availability by ethnicity

	Covid-19	HPV	Teenage booster	MenACWY	I don't know which vaccines are available to me
Total	84%	39%	51%	38%	6%
Asian	79%	28%	45%	39%	6%
Black	68%	30%	33%	33%	4%
Mixed	82%	31%	48%	37%	5%
White	86%	41%	53%	39%	6%

Differences among nations are also noteworthy. Noticeably fewer Welsh CYP know that HPV and meningitis vaccines were available (28% and 23% respectively), and together with CYP in Northern Ireland, they are more likely than other nations to not know which vaccines

are available. Data from Scottish CYP indicates there is more awareness than the rest of the UK. This data indicates that there may be value in applying lessons and approaches from Scotland to the rest of the country.

### Awareness of vaccine availability by nation

	Covid-19	HPV	Teenage booster	MenACWY	I don't know which vaccines are available to me
<b>Total</b>	84%	39%	51%	38%	6%
<b>England</b>	84%	39%	51%	39%	5%
<b>Scotland</b>	88%	46%	57%	40%	4%
<b>Northern Ireland</b>	75%	42%	46%	39%	9%
<b>Wales</b>	81%	28%	45%	23%	8%

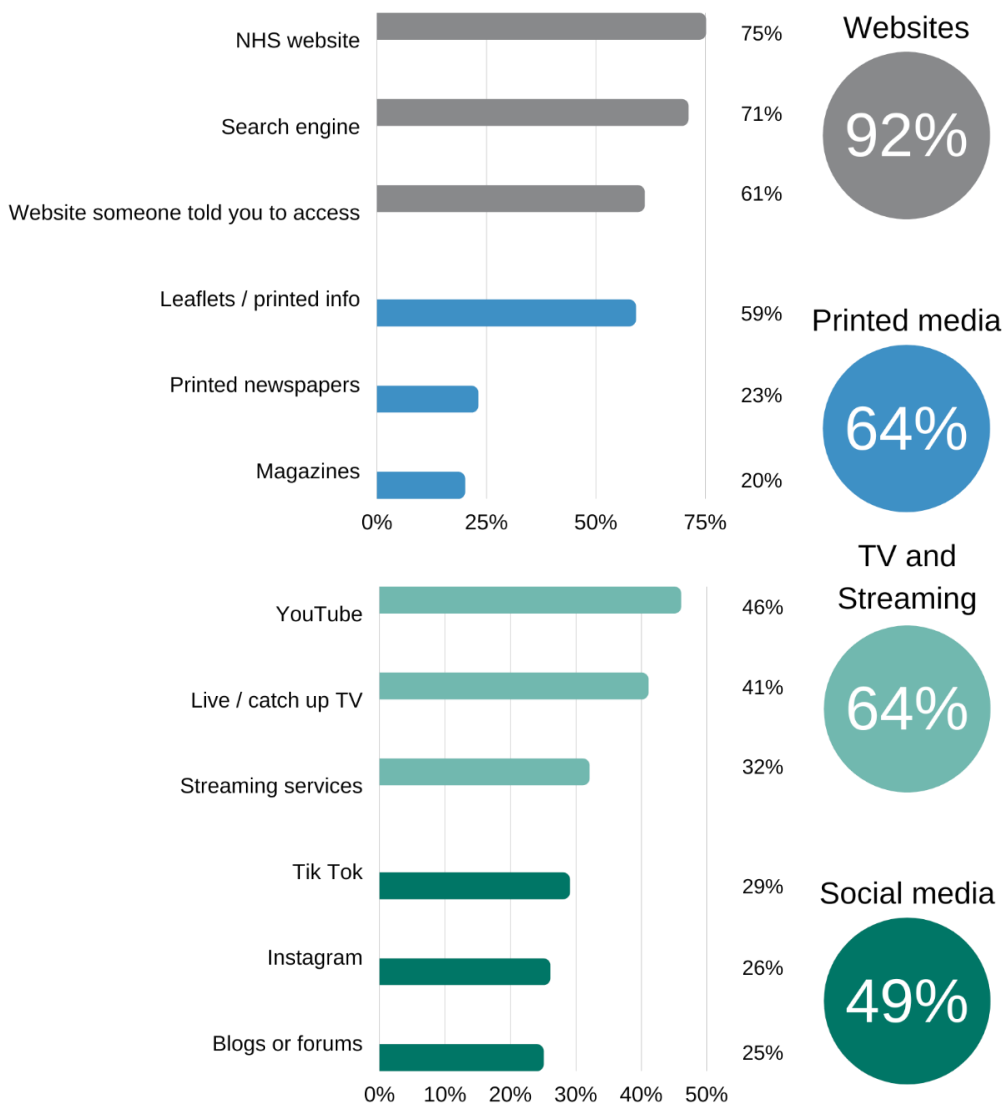
# “I trust mummy.” – How CYP make their decisions on vaccines.

## Where CYP go to for information - media

When it comes down to CYP getting information about vaccines, not surprisingly, the vast majority go online. The NHS website is the single most-used source of information for vaccines among young people, which is positive news. In total, 75% of 11-16-year-olds use it, followed closely by search engines like Google (71%). Partnerships between the NHS and Google, such as Knowledge

Panels, ensure that when searching for medical conditions, users are served accurate and trustworthy information taken from the NHS website. (20) Given that the majority of CYP told us they go to this resource for information, how might we better find it accessible for all CYP and how might we support them to then use the information amongst their networks?

## What CYP use to get more information about vaccines



Source: Dubit/RSPH survey 2022.

Whilst social media ranked lowest, approximately half of children use it to search for information. TikTok is the most used (29%), followed closely by Instagram (26%). Neither are search engines or sources of verified information: they are platforms where anyone can post visual content. CYP using such media could potentially have access to misinformation or 'fake news' without realising. However, social media companies have an

opportunity to grasp their role and support children further. As seen during the COVID-19 pandemic, Instagram signposted the public to reliable content and misinformation was removed. It also created a COVID-19 and vaccine policy, (21), demonstrating what can be done to support the flow of information to CYP. This approach could be expanded further to cover other vaccines.

What websites come to your mind?

“ NHS or one provided by a member of staff at school ”

### Where CYP go to for information – people

Parents are the source of information young people go to the most when they have to decide whether or not to have a vaccine. Nearly 9 in 10 said that is whom they would go. GPs ranked second (48%), school nurses third (38%) and teachers fourth (32%). It is very significant to see school nurses seen by the children as a person they would go to: they are crucial members of the public health workforce, whose work not only helps improve the health and wellbeing of CYP and families, but also tackles inequalities. They can also provide support to parents when CYP seek information from them.






School nurses are struggling. Between 2010 and 2018, the Royal College of Nursing reported 30% fewer school nurses. (22) Real-term cuts to the public health grant have depleted school nursing services, hindering their ability to support children. This will continue to

What would make you choose to have the HPV vaccine?

“ Mummy said it was important and has explained why. I trust mummy ”

impact the health of children if left unchecked. School nurses are crucial for the school-based immunisation programme, and if we want CYP to be better supported, we must increase the number of school nurses and fund their services properly.

## Go-to person for information about vaccines

- 1  Parents - 87%
- 2  GP - 48%
- 3  School nurse - 38%
- 4  Teachers - 32%
- 5  Other family members - 26%

Fewer Asian CYP ask their parents for information than their white peers (75% vs 89%), but more go to GPs (60% vs 47%), school nurses (43% vs 37%) and religious leaders (6% vs 3%). Black CYP still go to parents first (70%) and second to GPs (42%), however close friends come in third (32%). School nurses ranked fourth, with 30% of black CYP seeing them as go-to source of information. They are also more likely to speak to other friends and religious leaders than white CYP (11% vs 5%, 7% vs 3% respectively).

### Go-to person for information about vaccines by ethnicity

	My parents	My GP	My school nurse	A teacher	Other family members, like grandparents, cousins, aunts, and uncles
<b>Total</b>	87%	48%	38%	32%	26%
<b>Asian</b>	75%	60%	43%	26%	20%
<b>Black</b>	70%	42%	30%	28%	26%
<b>Mixed</b>	86%	51%	40%	37%	23%
<b>White</b>	89%	47%	37%	32%	27%



## Factors that would encourage CYP to have a vaccine

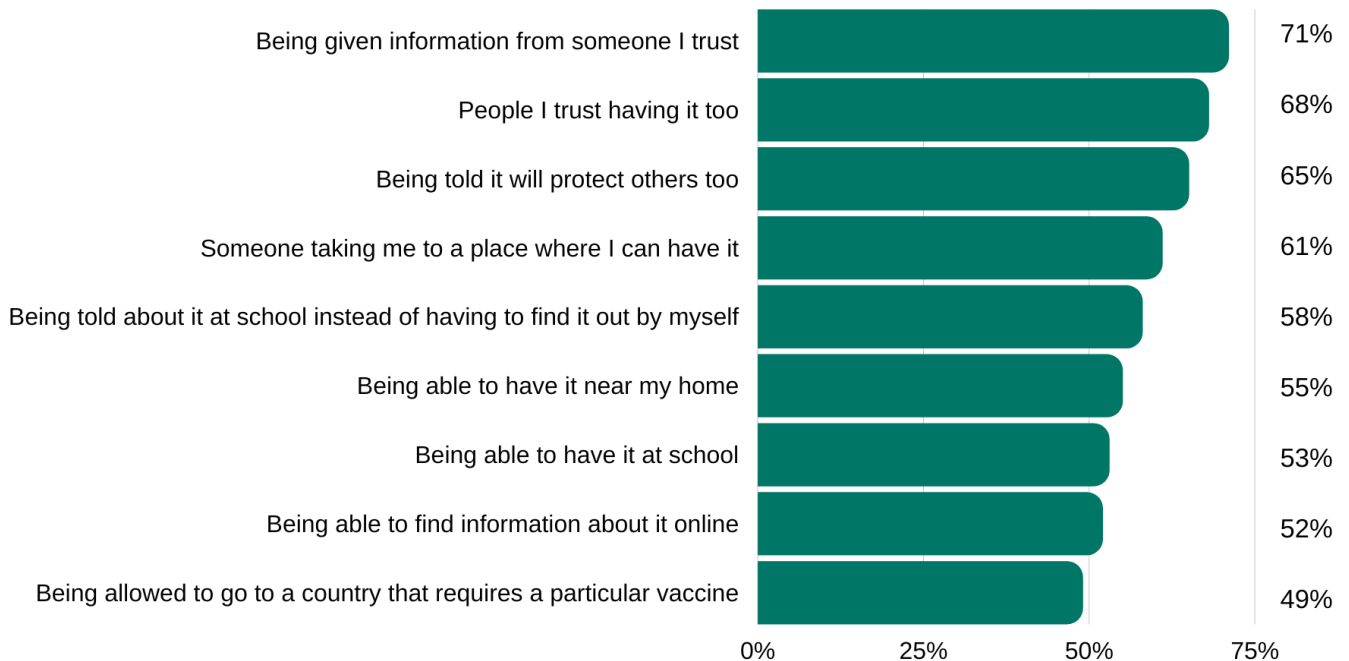
This data suggests that CYP feel encouraged to have the vaccine when people they trust give them information (71%) or have a jab themselves (68%), adding weight to the idea that parents are critical in improving vaccine understanding and uptake. Being told that it protects others too (65%), being taken to a place where they can have it (61%), being told about it at school (58%), being able to have it near their homes (55%), and being able to have it at school (53%), all play an important role too.

These findings tell us that CYP understand that vaccines protect their communities and that local availability of vaccines is important and makes sense. During the pandemic, the higher the availability of testing sites, the higher test

“ I think vaccines keep me and my friends and family safe ”

uptake was, particularly in areas of higher deprivation. (23) A potential solution to increasing uptake is ensuring clear messages reach CYP about availability in schools.

## Factors that would encourage CYP to have a vaccine



Source: Dubit/RSPH survey 2022.

The research highlights the central role of schools and school nurses in supplying trusted information and a physical location

to have vaccines. Reasons for this could vary, from convenience to the relationship CYP build with their schools.

“ If you miss your vaccine at school if you are off they should do it again in school later so you don't have to go down town. ”

### Who should decide?

The majority of CYP (56%) think that the decision to have a vaccine should be made jointly with parents, regardless of age. Approximately 1 in 5 think they should decide on their own, and this increases the older they get: it rises from 16% at 11 to 34% at the age of 16. The majority of 16-year-olds (the oldest group in our survey) still think they should all decide together (49%).

Fewer Asian and black CYP think this should be a joint decision when compared to their white peers. Whilst 58% of white children think they should decide with their parents, less than half of Asian and black peers thought the same (46% and 44% respectively). They are more likely to think that their parents alone or doctors should decide. Only 1 in 20 white CYP thought it should be a decision made by their doctors, compared to 1 in 10 Asian CYP.

### CYP opinion on who should decide if they should or should not have a vaccine by ethnicity

	Asian	Black	Mixed	White
My parents and I should decide together	46%	44%	49%	58%
I should decide by myself	18%	18%	25%	24%
My parents should decide for me	18%	18%	14%	10%
My doctor should decide	11%	14%	8%	5%
The Government should decide	5%	7%	3%	1%

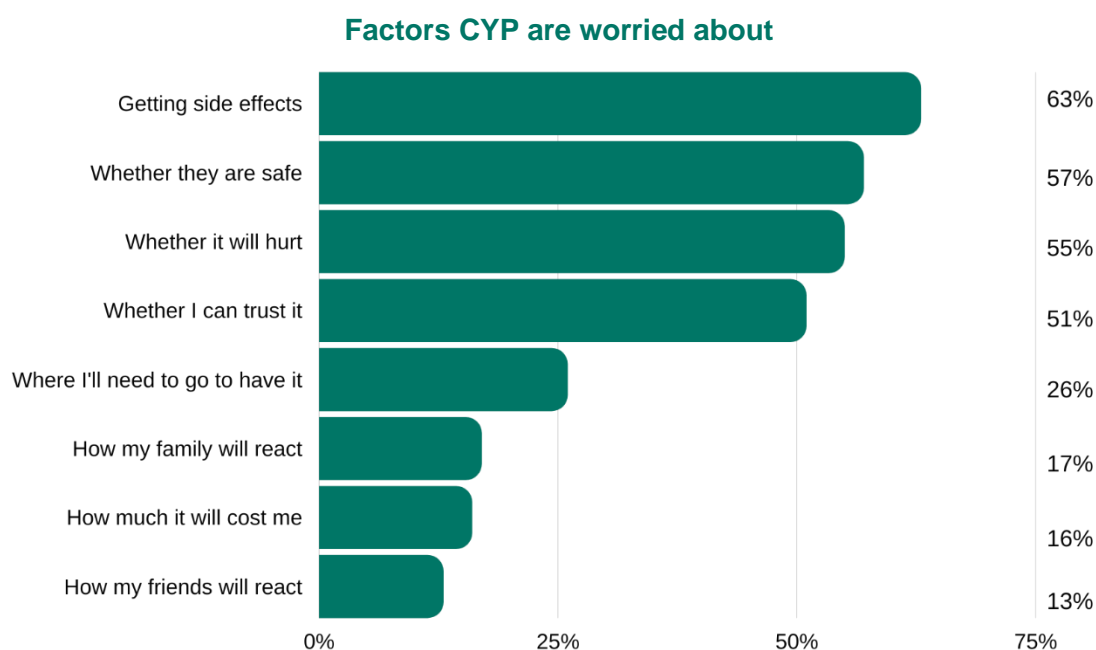
Despite differences by ethnicity, it is positive that the majority of CYP told us they want to be part of this decision. They want to choose and be involved in making

their own health decisions. In turn, we must provide clear information and support, so that children feel empowered to make informed choices.

***“I really worry about the side effects, but I also really worry about getting sick” – CYP concerns around vaccines.***

Despite trusting and seeing the benefits of vaccines, many CYP have their own concerns around them. Approximately 6 in 10 reported that they are most likely to worry about side effects. Over half (55%) said they worry about if it will hurt. Girls are more likely to have these concerns; 66% (vs 60% boys) worry about side effects, and 60%(vs 50% boys) about pain.

“ Why do they hurt so much? Is there other ways they can be administered other than by injection? ”



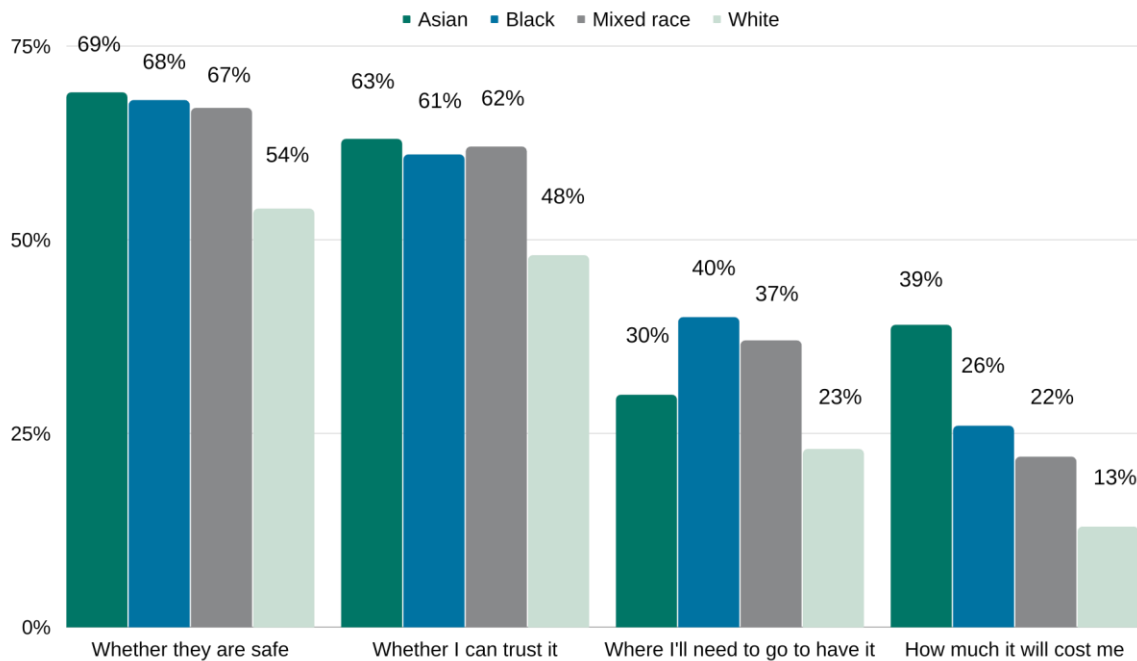
Source: Dubit/RSPH survey 2022.

Other common concerns are vaccines safety (57%), and if they can trust them (51%). Practical factors, such as where they will need to go to have them, were a concern to a quarter of young people (26%).

Views and concerns were different for CYP from different ethnic backgrounds.

Those with Asian, black and mixed ethnicity were more worried if they could trust vaccines and how safe they are, when compared to white peers. They were also more concerned about where they would have to go to have vaccines and how much it would cost.

### Some factors CYP are worried about, by ethnicity



Source: Dubit/RSPH survey 2022.

It is concerning that young people from Asian, black and mixed-race backgrounds are more likely to be worried about the potential costs of vaccines – especially during a cost-of-living crisis - and concerned about where they could have them. Current information about vaccines

and immunisation schedules may not be suitably designed and disseminated for all audiences. The data implies that tailored information for CYP across ethnicities - and their social networks and communities - could have positive results.

### Fear of needles

CYP also told us about their fear of needles and concerns about injections. Needle burden, also called blood-injection-injury fear, can be fairly common, with young people more likely to suffer from it than adults. (24) In the UK, fear of needles was a significant reason for Covid-19 vaccine hesitancy for black and Asian communities. (25)

“My main concern with vaccines are needles. I prefer the nose method.”

“ I always get the vaccines I am offered however I have a phobia of needles so it is quite difficult for me to deal with them however the nurses are usually understanding. ”

Participants also asked why needles are necessary? Or why tablets cannot be used to deliver vaccines? Whilst vaccines are not a novelty, there may be value in exploring the mechanics of delivery, including communicating why needles are necessary. These fears should not be dismissed, rather they should be acknowledged and addressed so that CYP feel listened to and empowered in their health decisions.



## **“Is HPV a vaccine for boys?” – a deeper look at the HPV vaccine**

HPV is a common infection that is spread by skin-to-skin and sexual contact. The HPV vaccine is highly effective, almost eliminating cervical cancer among its recipients. (26) However, since the pandemic there has been a decline in the uptake of this vaccine – down nationally from 86% to 69% (27) - which has huge health implications. In light of this, we conducted an initial analysis of attitudes, experiences and perceptions of the HPV vaccines.

The findings of our survey reflect the national concerns, with only 55% of 12-to-16-year olds saying they had heard about the HPV vaccine (children under 11 are not offered the vaccine). Half the boys (51%) of this age group say they have heard about it, compared to 60% of the girls. 12 to 16 years is when they are either offered the first dose or have already had both doses. When asked directly if they remember being offered the HPV vaccine, only 45% of this age group said yes.

We removed CYP aged 11 from this specific analysis (have you heard about

HPV vaccines) for two reasons. Girls and boys aged 12 to 13 years are routinely offered the 1st HPV vaccination, so, in theory, they were expected to score higher. Including the findings from the 11-year-old children would skew the results, as 15% of the boys and 27% of girls this age said they had heard of HPV vaccines, and only 7% of the boys and 3% of the girls this age said they had been offered HPV vaccines.

Research from 2016 already identified the level of HPV vaccine knowledge among teenagers was below expected, (28) it is of concern that the story still remains the same.

The numbers from our survey are below the reported uptake by nation, meaning that some of those young people will have had the vaccine, but do not remember being offered or having it. This suggests that for some young people, having a vaccine is not memorable or even a significant event. Some might not even have realised what the vaccine was for.

## Comparison between HPV vaccine uptake data and numbers of CYP who remember being offered a HPV vaccine on our survey by nation

	Vaccine uptake <sup>1</sup> (29)		Survey results	
	2 doses		Have you been offered a HPV vaccine?	
	Girls	Boys	Yes	I'm not sure
England <sup>2</sup>	67.3	62.4	37%	24%
Wales <sup>3</sup>	70.6	64.8	36%	25%
Scotland <sup>4</sup>	76.9	71.0	42%	29%
Northern Ireland <sup>5</sup>	68.2	62.4	44%	25%
<b>UK total</b>	<b>68.2</b>	<b>63.1</b>	<b>38%</b>	<b>24%</b>

The majority of those offered the HPV vaccine did have it (83%), but among those who have not yet been offered it, or declined it previously, just 45% say they are likely to have it in future. Close to half (45%) of 11-16 year olds said they are very likely to have the vaccine, and 30% shared they are unsure. One in 10 said they are unlikely to have it, which is of great concern for public health.

The size of the group who are unsure or declined to have it indicates that there is a

significant opportunity to increase vaccine uptake, by targeting those who are not certain but not resistant. We asked this group the reasons why they would not have the HPV vaccine, and 80% of them selected at least one reason that implied a lack of knowledge; indicating that improved communication, provision of age-appropriate information about HPV and the vaccine that is informing, myth-busting and addressing fears could have positive results.

<sup>1</sup> In England, girls and boys are routinely offered the 1<sup>st</sup> HPV dose when they are 12 to 13 years old, in school Year 8. The 2<sup>nd</sup> dose is offered 6 to 24 months after, so we are considering that CYP in school Year 9 have completed the scheme with 2 doses. This cut was decided based on data availability.

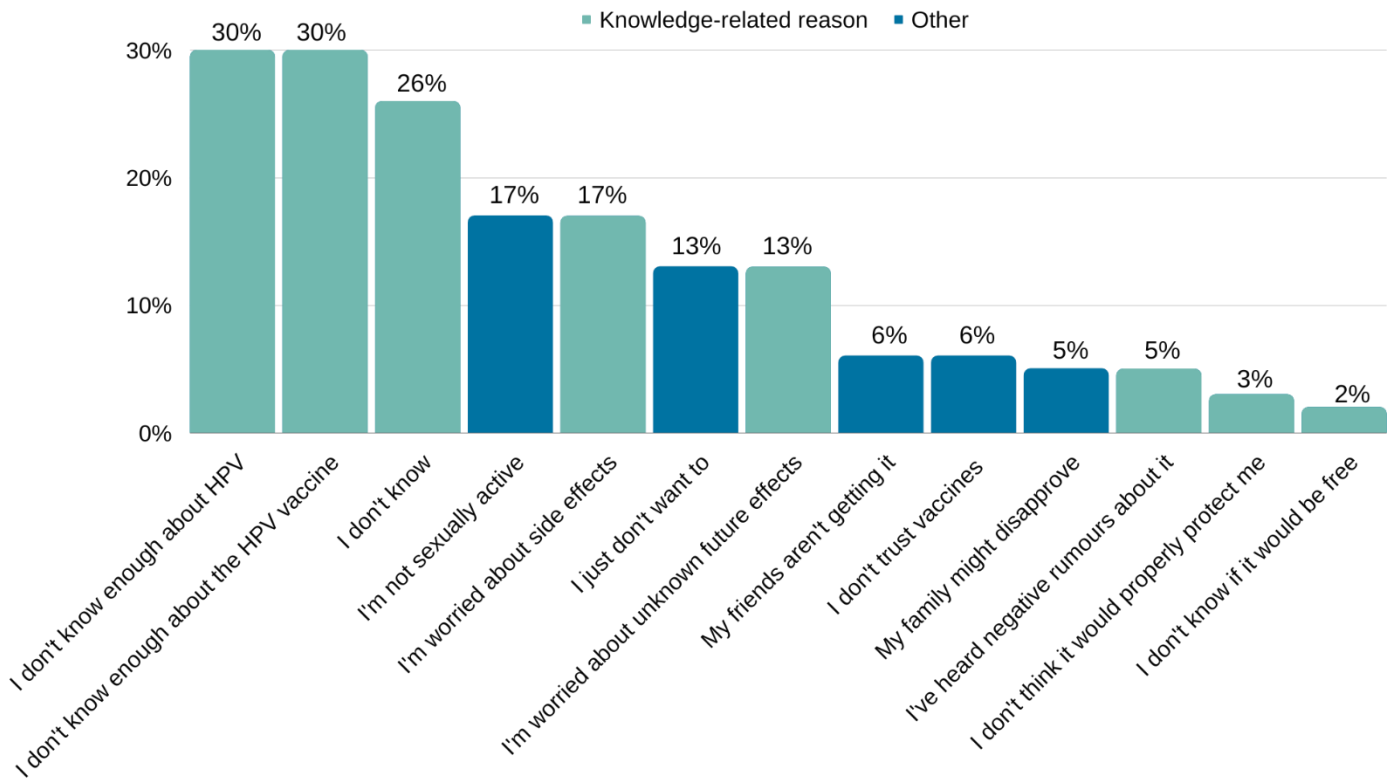
<sup>2</sup> Year 9

<sup>3</sup> Year 9

<sup>4</sup> S3

<sup>5</sup> Year 10

## Reasons why unsure CYP decided not to have the HPV vaccine

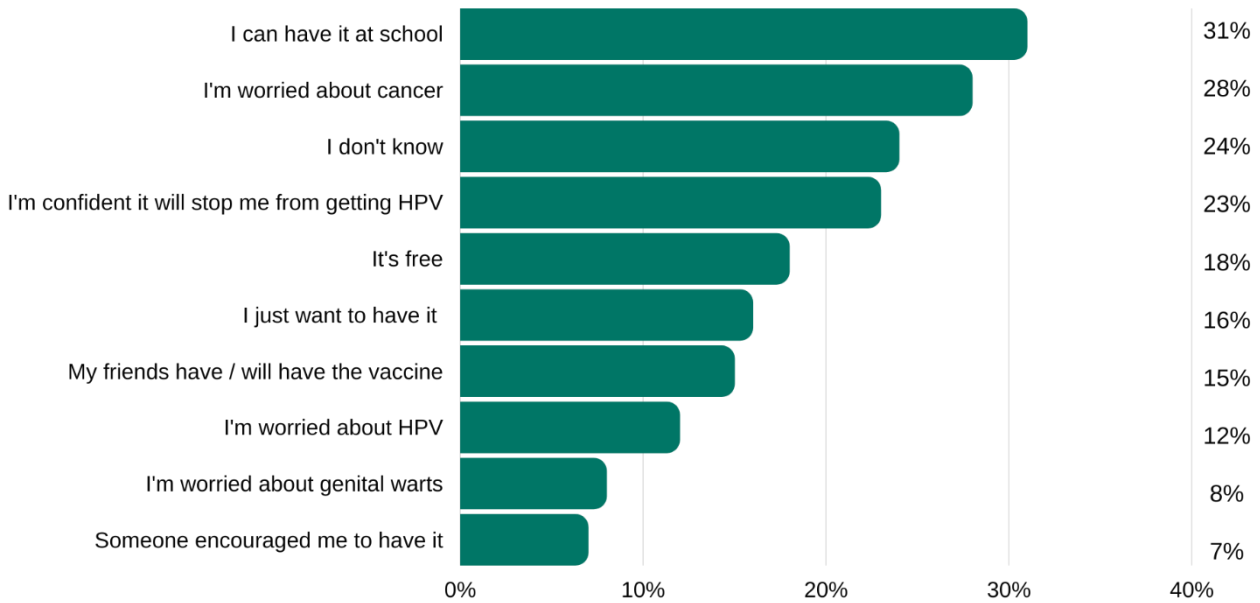


Source: Dubit/RSPH survey 2022.

It was also positive to see that having the HPV vaccine at school was the main reason they would choose to have the jab (31%), demonstrating once again the role of schools as key drivers to increase vaccine knowledge and uptake. It also

demonstrates that ease of access is an important consideration. Other factors, such as concerns about cancer (28%) and confidence it will prevent them from getting HPV (23%) were also communicated.

## Reasons why CYP would have the HPV vaccine



Source: Dubit/RSPH survey 2022.

Some boys reported that they were unsure if they would choose to have the HPV vaccine because “it’s for girls”, “I’m a boy!”, or “I’m not sure if it’s just for girls”. Without the vaccine, boys are vulnerable to genital warts and HPV-related anal, head and neck cancers. The HPV vaccine was introduced for boys in 2019, which suggests there is still more work to be done to improve understanding. (30)

Covid-19 could potentially have compromised the message around gender-neutral HPV vaccination. Less than a year after it started being offered to boys, schools had to be closed due to the first lockdown. It is worth exploring if this jeopardised communication with boys and their awareness of HPV vaccines being available to them.

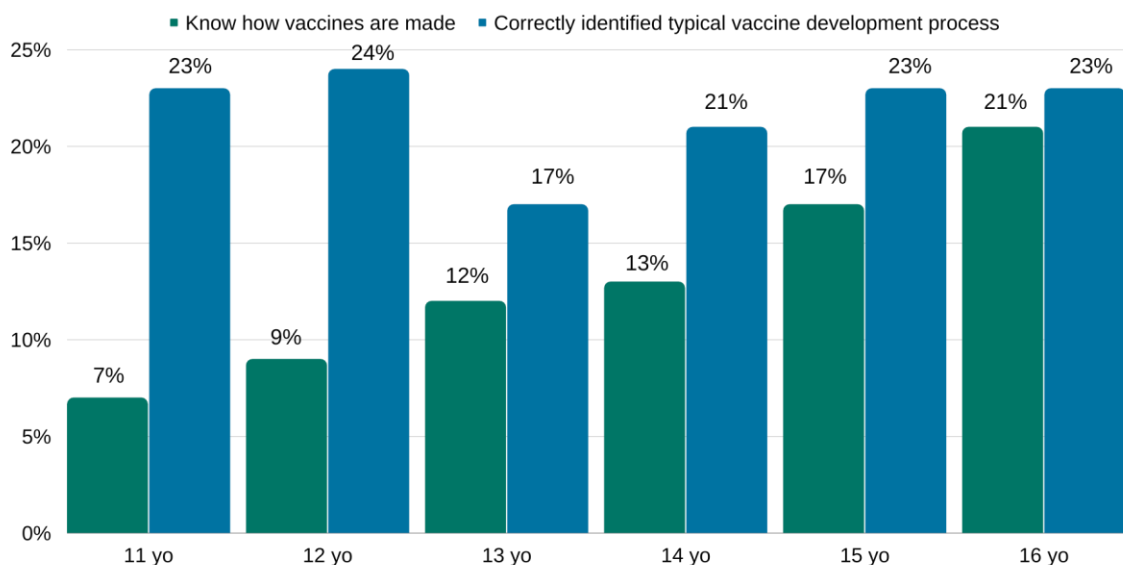
“ I just know that it was only the girls that had to get it ”

## “The government have to take vaccines as a serious issue in the country” – what CYP know about vaccine development

Results from our survey about the understanding of how vaccines work were encouraging. Three in five young people expressed that they had a general idea of how vaccines work, and understanding improved with age. Whilst the majority of 11–16-year-olds could correctly identify at least one ingredient found in most vaccines, almost a third did not recognise any ingredient. This knowledge gap did decrease with age, with 38% of 11-year-olds not recognising any ingredients as correct, dropping to 24% in 16-year-olds.

Self-reported understanding of the vaccine development process is low across 11-16 year-olds, with just 13% saying they know how they are made. When presented with the process and asked to order it as they believed was right, 22% of all CYP correctly ordered the process. However, given the high percentage of trust in vaccines, we might question how much knowing the details of the vaccine development process influences trust and whether it is important to know the detail.

### Self-reported understanding of how vaccines are made vs knowledge of vaccine development process by age



Source: Dubit/RSPH survey 2022.

Results around trust in all those involved in the development, testing and approval of vaccines were interesting. Almost 9 in 10 11-16 year-olds say they trust university scientists and researchers (89%), and NHS doctors and nurses (88%) to produce safe vaccines, with 38% of CYP saying they trust the latter a great

deal. They are significantly less likely to trust the Government (49%) and volunteers (53%) in this activity. Mistrust in the Government is not as surprising as the mistrust in volunteers. It could be that CYP do not know the role of volunteers in clinical trials and vaccine development.

Finally, levels of trust in pharmaceutical companies were relatively high, in contrast to how adults view them. Approximately 74% of 11-16-year-olds said they trust pharmaceutical companies, whilst in a

recent study asking UK adults how favourable they were towards pharmaceutical companies, only 50% of them had a positive response. (31)

“ Overall, I will always be happy to get a vaccine because I trust that they have been researched by professionals. ”



## Discussion

This is the first study of its kind and gives us a strong evidence-base to develop responses. Some of the recommendations and discussion points are prompts for development across vaccine stakeholders, whereas others reflect the calls RSPH have already been making, including adequate public health funding and supporting the workforce.

Some of the results of this survey were unexpected, for example CYP trust vaccines and think they are important, but many do not know which vaccines are available to them. This research provides an opportunity to reflect on the positives of the current vaccine programme and to take stock of areas where improvement is needed.

Vaccines do not seem to be a memorable event to many young people, and this raises the question of the role of inertia in vaccination programmes. Do these young people have the vaccine because everyone else is having it at school? Do they say they worry about side effects because it was in the news during the Covid-19 pandemic, but their true concern is actually the needle and associated pain?

Findings from this study indicate that knowledge about how vaccines are made, or what they contain, does not influence trust. Rather, trust seems to be influenced much more by gender, ethnicity and environmental factors such as the place where they live. Perhaps the key is to share with CYP the possible side effects and information about safety, and information about steps of the manufacturing and approval processes – whilst important – is less of a communications priority?

CYP seem to be more aware of which diseases have vaccines than what vaccines are available to them. Almost

three in four knew there are vaccines for tetanus and polio, but only half knew that the 3 - in - 1 booster (that protects against those two diseases plus diphtheria) is available. They also seem to be more aware of the existence of vaccines for certain diseases that are also offered when they are babies or young children, such as measles. This could be an influence from the parents, who recall taking their children to the GP and share memories with them, whilst school vaccinations have less parental involvement, as they are more likely to be signing authorisations, rather than getting more involved.

Whilst the evidence-base gives food for thought around many complex issues, what came across strongly are the stark differences between black, Asian and mixed ethnicity experiences and those of their white peers.

Not surprisingly, some variations in the data according to ethnicity reflect what is already known about the adult population. For example, NHS England and Improvement analysis showed that black groups are less likely to be vaccinated than their white peers for many vaccines. (32) Also, adults in minority ethnic groups seem to be less likely to receive newly developed vaccines. (33) People with black, Asian or minority ethnic backgrounds were significantly less likely to have a Covid-19 vaccine themselves, and more likely to be influenced by their communities or to have the vaccines if it benefited other people besides themselves. (34) Black and Asian CYP from our survey were also more concerned about their friends' and families' reactions to vaccines than their white peers.

The results strongly suggest that schools play a fundamental role. CYP trust school nurses and teachers, and are willing to

have the HPV vaccine because it is offered in their schools. More than half said that being able to have a vaccine at their school, or being told about vaccines at school, would encourage them to have it. Schools have always been considered important for immunisation programmes by policymakers because they are a place where CYP can be accessed (35) and it is heartening that CYP see schools as important places as well.

However, current evidence indicates that teachers need more support to have meaningful conversations about HPV vaccines, (30) school nurses are struggling with a heavy workload and levels of support from schools to this particular workforce varies. (36) School nurses not only offer information and immunisation to CYP, they are also important agents in minimising health inequalities. School nurses understand the needs of the communities they work with, and the solutions required where services are not reaching particular communities. (37)

Parents are seen by CYP as the number one source of advice, and the majority believe the decision for having a vaccine should be a joint one. Parents are crucial for vaccine acceptability, (38) and given the important role they play, they should also be able to access trustworthy information and feel supported to deliver it to their families. For example, parents tend to be more willing to vaccinate their children against HPV if healthcare professionals recommend them as they do with other vaccines, (39) and they are also more likely to decide in favour of vaccination if they heard that the HPV vaccine is for boys and girls. (40)

Boys' lack of awareness about the availability of HPV vaccine for them is not a surprising or new finding as research had already pointed out this gap in knowledge between boys and girls.

(10,28) Of great concern, however, is that despite the HPV programme having included boys for over 4 years, many still think it is only for girls. Tailored messages for boys should be explored further, so they understand the HPV vaccine is also important to their health, and so they are fully informed to make decisions. This data collectively tells us there is some way to go to roll out the HPV vaccine fairly and effectively.

Children and young adults are the decision-makers of tomorrow. They need to be included and empowered in making their own health decisions and, in turn, this will have a positive impact now and into the future. It is very positive to see that most think vaccines are good for them, but there are still some gaps that must be addressed, for example, improving knowledge dissemination, so they know which vaccines they are entitled to. We want children to be correctly informed to make health decisions and this involves finding out how and why they are currently excluded.

We know from talking to RSPH members that there is a wealth of experience and support for vaccine uptake across the public health community. It is our responsibility to work together to ensure that the experiences of younger people are listened to and used to shape services and interventions to their benefit.

This is the first study of its kind, which gathered insight and data on this young age group's knowledge, experiences and perceptions of vaccines in order to develop an understanding of their concerns and decision-making processes. This is a cross-sectional study, so relations and causality cannot be inferred, rather findings are a snapshot of a single point in time.

## Policy thoughts and recommendations

Based on the findings of this research, we have set out a number of recommendations to improve CYP vaccine engagement and uptake. These should be further explored by a range of relevant stakeholders, from Governments to social media companies, and from schools to community support networks.

### **1. Stakeholders should make clear and age-appropriate information available for CYP.**

Schools, GP clinics, behaviour change experts, information and education specialists and others are seen as sources of information by CYP. Tailored communication would help them with their concerns about side effects and vaccine safety, and boost their knowledge about diseases that could potentially affect them. For example, bite-size information in plain language with key figures could be distributed across schools. Reflecting on what worked during the pandemic and testing messaging with CYP and their networks would be beneficial.

### **2. There needs to be a joined-up, collective effort to increase awareness of which vaccines are available to CYP.**

Given the range of ways CYP find information, this would include a range of key organisations and professionals including schools, the public health workforce, and social media companies. Not knowing which vaccines CYP can have could potentially create a cycle of misinformation, missed opportunities for vaccination, lower uptake and increased risk of disease outbreaks. This chain of events can be broken with established public health approaches such as Making Every Contact Count for vaccines, (41) or increasing the numbers of Young Health Champions who represent, and engage

with, children and young people from all backgrounds.

### **3. Parents should be supported and have access to trustworthy information.**

Parents are the “go-to” person when CYP are searching for more information. It is crucial they understand the importance of their child being vaccinated, and the impact of this decision on their future. We must help them to build their confidence and knowledge, so they feel reassured when supporting their child and understand the information themselves.

### **4. We must develop a tailored strategy to deliver information and vaccines to black, Asian or mixed ethnicity CYP, or those living in areas where uptake is below expected.**

We must identify why CYP from these groups are not accessing vaccines and information to the extent that their white peers are. These are not hard-to-reach groups, rather we are collectively failing to include them in conversations. We must ask ourselves what we learned from the pandemic and what can be applied to school-aged vaccinations. Locally driven responses and initiatives such as ‘Grab-A-Jab’ have proven they can increase uptake, (42) and stakeholders should consider exploring similar ideas.

### **5. Schools, including school nurses, teachers and local community groups must be further supported, so they can better help CYP and parents.**

Schools are central to immunisation programmes, and CYP also see them as core settings - as places with people they trust, or where they would physically have the vaccine. Schools are convenient. CYP spend a large amount of their time at school, and very often, they are easy for parents to access as well. However, schools continue to struggle with

resources and capacity. Between 2010 and 2019, overall public spending on education in the UK fell by 8%. (43) School spending per pupil is expected to go up between 2021–22 and 2024–25, but this will only return to 2010 levels. (44) Proper funding and planning is necessary so that schools are adequately supported. For example, CYP who are unsure about having the HPV vaccine told us that they would have the vaccine because it is offered at schools, so these settings must be better supported to include them.

**6. Increase the numbers of public health workforce and provide them with proper funding and support, so they can help children and families.**

School nurses are the third most trusted person by children to give information about vaccines. The public health workforce – which school nurses are part of - plays a crucial role in keeping our population healthy. They are community health champions, link workers, and social prescribers, people who understand the communities they serve and know these children and their families. However, a third of the school nurse workforce has been lost over the last decade, and they are struggling with real-term cuts in the public health grant. The public health workforce need additional support to roll out vaccines programmes and implement innovative solutions and cannot do this without adequate funding and a plan to develop and support the workforce.

## References

1. World Health Organisation. Vaccines and immunization. [Online] 2023. Available from: [https://www.who.int/health-topics/vaccines-and-immunization#tab=tab\\_1](https://www.who.int/health-topics/vaccines-and-immunization#tab=tab_1). Accessed on 28 Feb 2023.
2. NHS. NHS vaccinations and when to have them. [Online] 2019. Available from: <https://www.nhs.uk/conditions/vaccinations/nhs-vaccinations-and-when-to-have-them/>. Accessed on 05 Jan 2023.
3. Bowyer HL, Forster AS, Marlow LAV, Waller J. Predicting human papillomavirus vaccination behaviour among adolescent girls in England: results from a prospective survey. *Fam Plann Reprod Health Care*. 2014; 40(1): 14-22.
4. Forster AS, Rockliffe L, Chorley AJ, Marlow LAV, Bedford H, Smith SG, et al. Ethnicity-specific factors influencing childhood immunisation decisions among Black and Asian Minority Ethnic groups in the UK: a systematic review of qualitative research. *J Epidemiol Community Health*. 2017; 71: 544–549.
5. Smith LE, Amlôt R, Weinman J, Yiend J, Rubin GJ. A systematic review of factors affecting vaccine uptake in young children. *Vaccine*. 2017; 35(45): 6059-6069.
6. Kennedy C, Gray Brunton C, Hogg R. 'Just that little bit of doubt': Scottish parents', teenage girls' and health professionals' views of the MMR, H1N1 and HPV vaccines. *International journal of behavioral medicine*. 2014; 21(1): 3-10.
7. Blanchard JI, Johnson C, McIntyre M, Crowcroft NS, McLellan A. A pre and post intervention study measuring the effect of interactive education on adolescent perceptions of vaccines, vaccine safety and disease risk. *Journal of Public Health*. 2019; 42(3): e272 - e277.
8. Carolan K, Verran J, Crossley M, Redfern J, Whitton N, Amos M. Impact of educational interventions on adolescent attitudes and knowledge regarding vaccination: A pilot study. *PLoS ONE*. 2018; 13(1): 1-14.
9. Thanasas I, Lavranos G, Gkogkou P, Paraskevis D. The Effect of Health Education on Adolescents' Awareness of HPV Infections and Attitudes towards HPV Vaccination in Greece. *International journal of environmental research and public health*. 2022; 19(1): 503.
10. Patel H, Pčolkina K, Strazdina K, Viberga I, Sherman SM, Tincello DG, et al. Awareness of HPV infection and attitudes toward HPV vaccination among Latvian adolescents. *International Journal of Gynecology & Obstetrics*. 2017; 137(2): 138-144.
11. Williams K, Forster A, Marlow L, Waller J. Attitudes towards human papillomavirus vaccination: a qualitative study of vaccinated and unvaccinated girls aged 17-18 years. *Journal of Family Planning and Reproductive Health Care*. 2011; 37(1): 22-25.
12. Flood T, Wilson IM, Prue G, McLaughlin M, Hughes CM. Impact of school-based educational interventions in middle adolescent populations (15-17yrs) on human papillomavirus (HPV) vaccination uptake and



- perceptions/knowledge of HPV and its associated cancers: A systematic review. *Preventive medicine*. 2020; 139: 106168.
13. Ferrer HB, Trotter C, Hickman M, Audrey S. Barriers and facilitators to HPV vaccination of young women in high-income countries: a qualitative systematic review and evidence synthesis. *BMC Public Health*. 2014; 14(1): 700-721.
  14. Hendry M, Lewis R, Clements A, Damery S, Wilkinson C. "HPV? Never heard of it!": a systematic review of girls' and parents' information needs, views and preferences about human papillomavirus vaccination. *Vaccine*. 2013; 31(45): 5152-5167.
  15. Seale H, Trung L, Mackie FE, Kennedy SE, Boros C, Marshall H, et al. A qualitative study investigating knowledge and attitudes regarding human papillomavirus (HPV) and the HPV vaccine among parents of immunosuppressed children. *Vaccine*. 2012; 30(49): 7027–7031.
  16. Carlson SJ, Marshall HS, Blyth CC, Macartney K, Leask J. Attitudes about and access to influenza vaccination experienced by parents of children hospitalised for influenza in Australia. *Vaccine*. 2019; 37(40): 5994-6001.
  17. Norman DA, Danchin M, Van Buynder P, Moore HC, Blyth CC, Seale H. Caregiver's attitudes, beliefs, and experiences for influenza vaccination in Australian children with medical comorbidities. *Vaccine*. 2019; 37(16): 2244-2248.
  18. Sadarangani M. Herd Immunity: How does it work? Oxford Vaccine Group. [Online] 2016. Available from: <https://www.ovg.ox.ac.uk/news/herd-immunity-how-does-it-work>. Accessed on 18 Jan 2023.
  19. Shen AK. Finding a way to address a wicked problem: vaccines, vaccination, and a shared understanding. *Human Vaccines & Immunotherapeutics*. 2020; 16(5): 1030–1033.
  20. NHS Digital. NHS unveils package of measures to help people find trusted health information online. [Online] 11 March 2020. Available from: <https://digital.nhs.uk/news/2020/google-knowledge-panels>. Accessed on 19 Jan 2023.
  21. Instagram. COVID-19 and vaccine policy updates and protections. [Online] 2023. Available from: [https://help.instagram.com/697825587576762/?helpref=uf\\_share](https://help.instagram.com/697825587576762/?helpref=uf_share). Accessed on 15 Feb 2023.
  22. School and Public Health Nurses Association (SAPHNA). School Nursing: Creating a healthy world in which children can thrive. A Service Fit for the Future. [Online] November 2021. Available from: <https://saphna.co/news/saphna-vision-for-school-nursing-successfully-launched/>. Accessed on 15 Feb 2023.
  23. Hendricks B, Price B, Dotson T, Kimble W, Davis S, Khodaverdi M, et al. If you build it, will they come? Is test site availability a root cause of geographic disparities in COVID-19 testing? *Public Health*. 2023; 216: 21 - 26.
  24. Taddio A, Ipp M, Thivakaran S, Jamal A, Parikh C, Smart S, et al. Survey of the prevalence of immunization non-compliance due to needle fears in children and adults. *Vaccine*. 2012: p. 4807-12.
  25. Freeman D, Lambe S, Yu LM, Freeman J, Chadwick A, Vaccari C, et al. Injection fears and COVID-19 vaccine hesitancy. *Psychological Medicine*. 2021 Jun: p. 1-11.

26. Falcaro M, Castañón A, Ndlela B, Checchi M, Soldan K, Lopez-Bernal J, et al. The effects of the national HPV vaccination programme in England, UK, on cervical cancer and grade 3 cervical intraepithelial neoplasia incidence: a register-based observational study. *The Lancet*. 2021; 398(10316): P2084-2092.
27. University of Bristol. Lesson for young people about the HPV vaccine in schools awarded quality mark. [Online] Feb 2023. Available from: <http://www.bristol.ac.uk/news/2023/february/hpv-vaccine-lesson.html>. Accessed on 15 Feb 2023.
28. Patel H, Jevé YB, Sherman SM, Moss EL. Knowledge of human papillomavirus and the human papillomavirus vaccine in European adolescents: a systematic review. *Sex Transm Infect*. 2016; p. 474 - 479.
29. UK Health Security Agency. Human papillomavirus (HPV) vaccine coverage estimates in England: 2021 to 2022. [Online] December 2022. Available from: <https://www.gov.uk/government/statistics/human-papillomavirus-hpv-vaccine-coverage-estimates-in-england-2021-to-2022>. Accessed on 15 Jan 2023.
30. Kmiotowicz Z. Boys in England to get HPV vaccine from next year. *BMJ*. 2018 July; p. k3237.
31. Ipsos. Attitudes towards pharmaceutical companies in the UK. [Online] 2022. Available from: <https://www.uk-pharma-reputation-index.org.uk/>. Accessed on 21 Nov 2022.
32. Chapman C, King O, South East EDI Team. Vaccination: race and religion/belief. NHS England and NHS Improvement - South. [Online] 2021. Available from: <https://www.england.nhs.uk/south-east/wp-content/uploads/sites/45/2021/05/Vaccination-and-race-religion-and-belief-A4.pdf>. Accessed on 22 Dec 2022.
33. SAGE - UK Government. Factors Influencing Covid-19 vaccine uptake. [Online] 2020. Available from: <https://www.gov.uk/government/publications/factors-influencing-covid-19-vaccine-uptake-among-minority-ethnic-groups-17-december-2020>. Accessed on 15 Jan 2023.
34. Husted M, Gibbons A, Cheung WY, Keating S. COVID-19 Vaccination Hesitancy in Adults in the United Kingdom: Barriers and Facilitators to Uptake. *Health Psychology*. 2023 Jan; Advance online publication.
35. Spratt J, Shucksmith J, Philip K, McNaughton R. Active agents of health promotion? The school's role in supporting the HPV vaccination programme. *Sex Education*. 2013; 13(1): 82–95.
36. Brabin L, Stretch R, Roberts SA, Elton P, Baxter D, McCann R. The school nurse, the school and HPV vaccination: A qualitative study of factors affecting HPV vaccine uptake. *Vaccine*. 2011; 29(17): 3192-6.
37. Boyce T, Holmes A. Addressing Health Inequalities in the Delivery of the Human Papillomavirus Vaccination Programme: Examining the Role of the School Nurse. *PLOS One*. 2012; 7(9): e43416 - e43416.
38. Seven M, Güvenç G, Şahin E, Akyüz A. Attitudes to HPV Vaccination among Parents of Children Aged 10 to 13 Years. *J Pediatr Adolesc Gynecol*. 2015 Oct; 25(5): 382-6.
39. Ogunbajo A, Hansen C, North A, Okoloko E, Niccolai L. "I think they're all basically the same": parents' perceptions of human papilloma virus

- (HPV) vaccine compared with other adolescent vaccines. *Child Care Health Dev.* 2016; 42(4): 582-7.
40. Waller J, Forster A, Ryan M, Richards R, Bedford H, Marlow L. Decision-making about HPV vaccination in parents of boys and girls: A population-based survey in England and Wales. *Vaccine.* 2020 Jan; 38(5): 1040-1047.
41. Healthy Conversation Skills. Vaccine Confidence - Healthy Conversation tool. [Online] NA. Available from: <https://www.healthyconversationskills.co.uk/vaccineconfidence>. Accessed on 20 Feb 2023.
42. NHS England. NHS COVID 'grab-a-jab' initiative boosts ethnic minority vaccinations. [Online] 28 August 2021. Available from: [england.nhs.uk/2021/08/nhs-covid-grab-a-jab-initiative-boosts-ethnic-minority-vaccinations/](https://england.nhs.uk/2021/08/nhs-covid-grab-a-jab-initiative-boosts-ethnic-minority-vaccinations/). Accessed on 10 Feb 2023.
43. Institute for Fiscal Studies. Education spending changes put a major brake on levelling up. [Online] 30 November 2021. Available from: <https://ifs.org.uk/news/education-spending-changes-put-major-brake-levelling>. Accessed on 02 Feb 2023.
44. Institute of Fiscal Studies. Schools: In the 2022 Autumn Statement, the government allocated an extra £2.3 billion to schools in England. [Online] 2022. Available from: <https://ifs.org.uk/education-spending/schools>. Accessed on 02 Feb 2023.
45. Hilton S, Patterson C, Smith E, Bedford H, Hunt K. Teenagers' understandings of and attitudes towards vaccines and vaccine-preventable diseases: A qualitative study. *Vaccine.* 2013; 31(22): 2543-2550.



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