Forum: ECOSOC

Issue: Managing the threat to global health caused by refusing vaccinations

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Introduction

The invention of the vaccine has been a breakthrough in disease-prevention in the world of modern medicine. Vaccines are made of dead, weakened or broken up antigens, they are unable to cause an infection, but the immune system recognises vaccines as “foreign” and produces antibodies to protect the body. After the threat has been eliminated, the antibodies will decompose, but immune cells will retain the information about how to beat the “foreign” microorganism in their memory. This reduces the risk of contracting and suffering from the disease related to the antigens in the vaccine in the future.

But vaccines don’t just protect the individual; they benefit the community. Once a person is successfully vaccinated so that they are immune to a specific disease, they are known as being “immunized”. How successful the vaccine is differs from person to person, and protection from vaccines can decrease over time due to the person’s own immune system as well as the natural evolution of viruses. This is why vaccines need to be updated periodically. Vaccines are constantly being improved for effectiveness against evolving diseases such as the flu and new vaccines are being developed for emerging diseases. Due to the differences in strength of immunization, “herd immunization” is very important. If the majority of people in a community are vaccinated, the better immunized can provide some protection from diseases to the less immunized or non-immunized people. This is especially important to people who are unable to take vaccines because of allergies, their body not recognising the vaccine or other medical reasons. Despite the proof that vaccinations have limited the spread of disease, not everyone is in favour of taking vaccinations, due to being sceptical or other personal reasons.
Anti-vaccination movements have been around since the creation of the vaccination in 1796 by Edward Jenner. Distribution of the smallpox vaccination began in the early 19th century, shortly after the invention of the first vaccine. Edward Jenner’s initial experiments revealed that his new vaccine could prevent a child from getting smallpox by injecting them with lymph from a cowpox blister. However, people thought that this method was primitive and inhumane. Some thought that his method was unsanitary and others used reasons of religion to refuse vaccines that involved animals. There was a large opposition to the smallpox vaccine in England and the US during the late 19th century. In the U.S., an anti-vaccination Society was formed in 1879 following British anti-vaccination campaigner William Tebb. This caused the United States vaccination administration system to curb backwards as many court battles were initiated by these groups with the hope of abolishing mandatory vaccination laws. Consequently, in the 1990s, misconceptions about the MMR (measles, mumps and rubella) vaccine had begun to arise and is what led to an outbreak of measles in several countries. 5 years ago, the U.S. experienced an outbreak of measles with a reported all-time high of 667 cases. Furthermore, Pakistan, Afghanistan and Nigeria are the only 3 countries that haven’t been able to stop polio transmission, a disease which vaccines have already eradicated in other countries. A few Muslim leaders have convinced other Muslims that the elimination of the polio virus is “an American ploy to sterilize Muslim populations” or “that vaccination is an attempt to avert the will of Allah.” In Northwest Pakistan, parents have been arrested for refusing to let their children get the polio vaccine. Additionally, the Malaysian government considers it as a form of child neglect and it is punishable by criminal charges of a 5000
USD fine and/or a jail sentence of ten years. Alternatively, Australia’s “No Jab, No Pay” law since the beginning of 2016 prevents parents who avoid vaccines from claiming childcare benefits.

In countries such as the U.S., there are no laws regarding the administration of vaccines. But there are laws in place stating that children must be vaccinated before they enter formal schooling. Yet, the law also excuses parents from vaccinating their children if they present religious or philosophical reasons. In Indonesia, people were swayed away from the MMR vaccine due to the opinion of their Islamic leaders who stated that because it contains small amounts of pig products it cannot be consumed by those who follow Islam. This claim not only reduced the vaccination distribution rate in Indonesia, but also in Thailand as these ideas spread there. The outbreak of such preventable diseases in Muslim-majority countries have led governments to impose fines on people who refuse vaccines in order to improve the public health.

However, no matter how harsh these laws/punishments are, people still may not truly believe in vaccines’ ability to prevent disease. Education and awareness is what will keep them fully informed and remove any doubts they may have about it. As well as promoting vaccines, it is also vital for the government and healthcare professionals to refute false claims from the media and present scientifically proven evidence, so that rumours can be prevented from being spread and people can be relieved of their worries.

**Definition of Key Terms**

**Vaccination**

A stimulating microbe-like agent used to improve immunity to a particular disease. It forces the immune system to recognise the agent as “foreign” and begin the production of antibodies to kill and then “remember” the agent, so that the next time the immune system encounters this type of microbe, it can destroy it easily and efficiently.

**Vaccine Hesitancy**

This term refers to a delay in acceptance or refusal of vaccines. The Vaccine Hesitancy Determinants Matrix displays the factors influencing the behavioural decision to accept, delay or reject some or all vaccines under three categories: contextual, individual and group, and vaccine/vaccination-specific influences. These factors include complacency, convenience and confidence. (WHO, 2017)

**Vaccine Confidence**
The trust in the effectiveness and safety of vaccines as well as trust in the healthcare system that provides it. Vaccine confidence is the overall belief that vaccines serve the best interest of your own health and the public's. This is one of the fundamental factors of vaccine refusal. (European Union, 2018)

**Antigen**

A toxin or foreign substance that stimulates an immune response from the body, e.g. producing antibodies. Antigens are proteins that are found on the surface of a pathogen and they are specific to the pathogen, as every pathogen has different antigens on its surface. Dead or weakened antigens from the related pathogen are used in vaccines. (Microbiology Society, 2019)

**Background Information**

There are several factors affecting hesitancy to vaccination, which according to the World Health Organisation are complacency, convenience and confidence. There are several reasons why people refuse to comply with vaccines, including a lack of confidence and poor access to vaccines. Based on the current situation, we can identify some of the broader reasons regarding vaccine refusal. These include religion, philosophy, worries about safety, misinformation or other personal beliefs.

**Convenience**

In poorer countries, people may not be able to afford good healthcare and may dismiss vaccines as unnecessary for their health. LEDCs also tend to have a higher percentage of an illiterate population, therefore often people are not educated enough about the importance and safety of vaccinations.

**Complacency**
A graph representing vaccine refusal in different countries and cultures. South-east Asian countries such as Bangladesh and India have shown to have a lower percentage of vaccine refusal compared to North and South American countries. (Wellcome Trust)

According to a global survey published by the Wellcome Trust, a UK health research NPO, a larger proportion of people in MEDCs believe that vaccines are unsafe, as compared to those in LEDCs. The reasoning behind this is that LEDCs experience the ongoing spread of disease. Hence, their governments are more likely to support vaccines in order to combat the disease(s) plaguing their citizens. Western countries have not felt the consequences of disease due to better sanitation and education and therefore do not recognise the need to be vaccinated. In fact, this is one of the main reasons why parents refuse to comply with vaccines. In the past decade, paediatricians have reported a ten percent increase in the number of parents who refuse to vaccinate their children because they believe it is not needed. Many of the vaccine preventable diseases are becoming less and less common, presumably due to the people getting vaccinated, therefore some people have become overconfident that vaccinations are not needed or have no use. Some people also believe that falling ill to preventable diseases can actually be beneficial to them. Their logic is that combatting a preventable disease will make their immune system stronger in the long run after recovery. People also do not realise the severity of these preventable diseases as they think that these can be easily treated once contracted.

Confidence

When contemplating the safety of vaccines, people often think about the side effects. Recently, there was an assumption that autism was caused by vaccinations. This claim is refuted and is seen less
often now as it has not been scientifically proven. However, a lot of people are unaware of exactly what vaccinations do, and many people think that vaccines will cause discomfort or “burden” their immune systems. These ideas are often unlikely to occur and are likely a result of paranoia and lack of knowledge about vaccines. The health industry must make use of education and awareness to administer more vaccines to the public.

**Religion**

Research revealed that the US was the only MEDC where religious people are more likely to put faith in their own beliefs rather than science (and vaccinations), according to Wellcome Trust. Although no major religions oppose vaccinations, a few religious groups have come up with religious justifications as excuses for refusing vaccines. Religion is one of the main reasons for the decline in people taking vaccinations and is also the hardest reason to disregard or dissuade as it is related to the person’s core belief system.

**Misinformation**

The placebo effect can have a strong influence on an individual or group of individuals, especially negative beliefs which tend to be the focus of an individual’s efforts due to stress. In 2003 in Nigeria, 3 states boycotted the polio vaccine because political and religious leaders in the country spread rumours to the public that the vaccines could contain HIV and cancer. The effects of the boycott were clear: a small number of polio cases quickly increased in to a large epidemic in Nigeria.

Many countries are misinformed about vaccines which harms the safety of society.

**Major Parties Involved and Their Views**

**United States of America**

Recently, the United States has experienced troubles with vaccine acceptance and immunization, leading to a national healthcare epidemic with the outbreak of vaccine-preventable diseases such as measles and polio. Luckily, policy interventions, such as mandatory vaccination requirements for children to meet before they enter school, have helped to increase vaccination rates. However, school immunization laws differ from state-to-state, which causes some complications within the country. Since 2008, the U.S. allowed exemptions from the mandatory vaccines based on specific excuses. In Colorado, at least 11% of the vaccinated children contracted measles because of contact with children who were exempt from vaccines (non-immunized).
The European Union (EU)

In 2016, a 67-country survey conducted by the Vaccine Confidence Project (VCP) revealed that the European region had a comparatively lower confidence in the safety of vaccines. Vaccine refusal has been increasing in the EU since the start of 2000, especially the MMR vaccine. In addition to measles, influenza is causing 5000 to 17000 deaths annually in the EU. Two years later, a new survey was done by the VCP to further observe the changes and include all of the EU member states (the 2016 survey was missing eight countries within the EU). Fortunately, the results showed that there is a positive attitude towards vaccinations amongst all nations in the EU. The majority of the EU public strongly agree that vaccines are important, safe, effective and compatible with their own religious beliefs, although the MMR vaccine is perceived to be more important and safe than the influenza vaccine by 10-15%. Within the EU, Portugal has the most progressive attitude towards vaccines; Bulgaria with the most regressive attitude (although a two-thirds majority is in favour of vaccines). The survey revealed that education and age are determinants of confidence, with elderly people in favour of vaccines, and those who’ve completed secondary education being more likely to be in favour of vaccines than those who only completed primary education.

In addition to the public, general-practitioners were also surveyed to see whether they are confident in the safety of the vaccines they are providing to the public. Of the data collected, the results show that GP confidence is also quite high. General-practitioners were likely to recommend vaccines to their patients, however they were less likely to recommend vaccines to a pregnant woman even though contracting a disease can be especially harmful to the mother and the fetus. Generally, GPs have a more confident attitude than the general public, likely because of their advanced education. There is also evidence suggesting that countries with confident GPs have a larger proportion of the population agreeing that vaccines are safe and important.

The VCP has found vaccine confidence has increased from 2015 to 2018 in the European Union. The increase in measles outbreaks in the EU since 2015 have led to talks in the media and changes in the national health policy to make vaccines mandatory. 49 people have died of measles since 2017.

Timeline of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Description of event</th>
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<tr>
<td>1796</td>
<td>The first vaccine was developed by Edward Jenner to protect people from smallpox.</td>
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<tr>
<td>1879</td>
<td>The formation of an anti-vaccination organisation/society began in the U.S. upon information spread from Brit campaigner William Tebb.</td>
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1940s
The healthcare system had developed enough by this time for large-scale production and distribution of existing vaccines such as the smallpox vaccine to protect people from diseases.

1955
Following several polio epidemics that occurred in the United States, the polio vaccine was finally invented and licensed due to the efforts of Jonas Salk.

1971
The measles, mumps, and rubella vaccines which were developed respectively in 1963, 1967 and 1969 were successfully combined to create the MMR vaccine.

May 2012
A framework known as the Global Vaccine Action Plan (GVAP) was created and supported by all but 2 member states in the World Health Assembly.

September 4th, 2018
The Joint Action on Vaccination (JAV) that was originally announced by CHAFEA in 2017, is finally launched in Paris. The JAV consists of a 5.8 million euro budget and 23 participating nations (twenty of which are EU states).

Relevant UN Treaties and Events

- Implementation of the International Health Regulation (2005), 24 May 2014 (WHA67.13)
- Vaccine hesitancy and drop in vaccination rates in Europe, 19 April 2018 (P8_TA(2018)0188)

Resolution WHA67.13

The focus of this International Health Regulation document is to communicate the appropriate time and place for getting vaccinations for yellow fever. The International Health Regulation specifies that for international travel, travellers may be required to get vaccinated and certified for yellow fever in their home country or country of origin because certain countries will demand proof of their vaccination against yellow fever.

Resolution P8_TA(2018)0188

This resolution aims to maximise vaccine coverage and inform people about the importance of vaccinations. The resolution calls upon nations to make sure all healthcare workers are sufficiently vaccinated first and foremost, to ensure the safety of the healthcare system for people who require their services, as well as act as a reliable endorsement for vaccines to other citizens. In addition to informing people about vaccinations, the resolution also asks for the prevention of the spread of unreliable and misleading information from the media. Lastly, the resolution asks nations to provide better access to vaccines to those who cannot afford any of the required vaccines.
Previous Attempts to Solve the Issue

The Global Vaccine Action Plan (GVAP)

The GVAP was created by the DoV (Decade of Vaccines) collaboration, a ten-year vision involving development, health and immunization experts and stakeholders launched at the 64th World Health Assembly in May 2011. Its aim is to prevent millions of deaths from vaccine refusal by 2020 through the provision of more affordable access to existing vaccines in all regions and communities. The GVAP’s five main goals are as follows: to eradicate the polio disease worldwide, meet individual vaccination targets for each country (which will be checked by the GVAP), exceed the Millennium Development 4 goal for child mortality, meet local, national and global plague elimination targets and lastly, develop new and improved vaccines (with the help of the GVAP's development aids and funds).

Members of the Decade of Vaccines Collaboration ensure children in low-income countries are able to get the same vaccines as those in high-income countries.

Joint Action on Vaccination

In recent years, the European Commission has been assisting EU countries with their national policies and programs to ensure total vaccine coverage. On December 7th, 2018, the EU Council adopted a Recommendation to strengthen cooperation between EU nations on the outbreak of vaccine-preventable diseases.

The Joint Action on Vaccination (JAV) is organised by the European Commission and French company INSERM and co-funded by the Health Programme (3.55 million euros contributed) to improve the EU’s national health policies. This effort to deter vaccine hesitancy and increase overall immunity in the EU will take place over 3 years.
Possible Solutions

Education and Awareness

It is essential that education is provided to the public if total immunization is to be achieved. Punishments and fines may show some gradual changes but they won’t be significant in the long-run because people will still stick to their ideals and core beliefs. Ultimately, it is clear and cohesive public education that will prevent vaccine refusal. For example, in response to worries from Muslim families about the halal status of vaccines, national and international Fatwa Councils issued numerous explanations to elaborate on the details of vaccination practices and immunisation for various vaccines. Therefore, all countries the healthcare organisations must update vaccine information regularly for the public, because misinformation from religious groups and social media are decreasing the vaccination rates worldwide.

Health workers

Health workers that must steadfast, certain, trusted and influential. Clinicians can have a large impact on the patients that they treat and therefore it is crucial that the education and training foundation of health workers are sufficient and thorough regarding vaccines. Often health workers around the world are faced with time constraints, limited resources and insufficient information in their training to respond to queries about vaccinations. Health workers also need to be aware of people who are sceptical about vaccinations, especially when it comes to religion, which can be a sensitive topic. People need to understand everything there is to know about a vaccine, but moreover what is at stake if they decide to delay or reject vaccines.

Global community

It is imperative that the community is involved with promoting vaccines and not just accepting information blindly from the health industry. The wider community and the health system are interdependent and they must interact with each other as often as possible to get the best service possible. If communities are allowed to seek out health professionals and discuss with them their issues with vaccinations, many of their worries can be put to ease with accurate and reliable scientific information. Face-to-face interactions are proven to be much more effective than other forms of communication as they establish a closer relationship with the listener and speaker. Furthermore, as people become more convinced that vaccinations are safe and essential to their own safety, they will be able to spread this information within their community.
The advantage of this is that people trust their friends and families much more than they will be able to trust the media or health industry because they are like-minded and familiar.

**Transparency**

We need to have global transparency about new developments with vaccinations so that they can be issued to low-income and high-income countries alike, with minimum to no delay. Research and funding for new vaccine developments should be shared between nations, in order to limit both the domestic and international spread of disease. Vaccine refusal is a global issue, and that means governments, national and international organisations all need to cooperate to solve this issue. Everybody needs to have access to vaccines in order to meet their necessary human rights to living in a safe and healthy environment.

**Bibliography**


“Decade of Vaccines Collaboration.” Gavi, the Vaccine Alliance, Gavi, 2019, www.gavi.org/about/ghd/dov/.


Appendix or Appendices


