IMMUNISATION CONTROVERSIES

What You Really Need To Know

2nd Edition

Edited by
Dato' Dr Musa Mohd Nordin
Dr Siti Aisyah Ismail
Chan Li Jin @ Ahaddhaniah

A collaborative project of
Islamic Medical Associations and Network of Indonesia (IMANI)
Islamic Medical Associations of Malaysia (IMAM)
Federation of Islamic Medical Associations (FIMA)

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Contents

Contents

Appendices

FEAR OF POLIO ! Long Queues for Polio Vaccines

Preface

… whosoever kills a human being for other than manslaughter or corruption in the earth, it shall be as if be had killed all mankind, and whoso saves the life of one, it shall be as if he had saved the life of all mankind…
- Al-Maidah:32

"Those who do not remember the past are condemned to repeat it"
- George Santayana

We have now sadly become the victims of our success.

Many have forgotten that, not long ago, diseases like smallpox killed 1 out of 3 patients, while polio caused significant muscle paralysis leading to breathing cessation. Children had to be placed in dreaded iron lung chambers to help them breathe, and not many survived to recount their horror.

Almost 8 million children under the age of 5 years die every year. One child dies every 20 seconds from a disease preventable by vaccines. To many global health agencies, this is a preventable human tragedy. Hence, the World Health Organisation (WHO), the United Nations Children's Fund (UNICEF) and their global partners have undertaken serious initiatives in the Expanded Programme on Immunisation (EPI) to increase the coverage of routine vaccines and expand the outreach of new vaccines for children in developing countries.

This will save more lives, further reducing under-five mortality by at least 25% to achieve the Millennium Development Goal number 4 (MDG4) , which is to reduce the under-five mortality rate by two-thirds between 1990 and 2015.

The decades of efforts by international agencies, governments and NGOs, however, have been hampered by the anti-vaccination movement of late. Unfortunately, a small number of physicians support this movement, buoyed by the vast majority comprising individuals or small groups of varying backgrounds who create noise through social media and blogs.

Virtually all of their opposition of vaccine is based on emotions, personal experiences and quoting “anti-vaccine gurus” on social media who do not conduct research but thrive on writing blogs for conspiracy theory websites. Realising they have insufficent data to prove their allegations, these conspiracy theorists utilise emotional testimonies and unauthenticated sweeping statements as their strategy.

More alarming is that a growing number of Muslim parents have fallen prey to the “anti-vaccine” camp. Some believe that immunisation is part of the Zionist scheme to weaken Muslims and undermine the health of their progeny. Others are led to believe that there are non-halal (non-permissibile) substances in vaccines. Both groups are victims of misinformation. Muslim scholars around the world have unanimously proclaimed that the Objectives of the Shari’ah (Maqasid Shari’ah) is the enhancement and preservation of *adalah* (justice) and the *maslahah* (benefit), welfare and wellbeing of the *ummah* (humanity).

According to the scholars, the Quran and hadiths (authentic traditions) give utmost priority to prevention and protection against all forms of personal and social misconduct. In the context of health, it prioritises the golden rule that “prevention is better than cure”.

Immunisation exhibits all the hallmarks of a preventative health strategy that has saved lives and prevented intellectual and physical disabilities. True to the principles of Islamic jurisprudence (sadduz- zaraik), it has closed avenues to inflict harm, damage and destruction. All the vaccines in the National Immunisation Programme (NIP) have been scrutinised by experts in Fiqh

(JAKIM and the National Fatwa Council) and Science (Ministry of Health), leaving no question of their efficacy, safety and permissibility (halal).

Immunisation enhances the immune system of a child and the effectiveness of vaccines has been scientifically demonstrated in global immunisation programmes. The widespread use of the smallpox vaccine has led to its eradication in 1979. The last few cases were from two Muslim countries - Bangladesh and Somalia. Polio has been eradicated from most parts of the world, but remains endemic in three Muslim countries - Afghanistan, Pakistan and Nigeria. This unfortunately is due to conservative and ill-informed Muslim scholars who advised against immunisation.

There is virtually no research or studies from the anti-vaccination group. Many of them quote blindly Wakefield's study that linked MMR (Measles, Mumps & Rubella) vaccine with autism, which has since been withdrawn from the Lancet when it was discovered that it was flawed and fraudulent. The study raised great fear among parents about MMR, leading to a significant decline in the coverage of MMR vaccination from 90-95% to 60-70% in the United Kingdom.

It also led to a decline of MMR uptake in other countries, resulting in measles outbreaks worldwide. Many parents underestimate the severity of the complications of these vaccine-preventable diseases. Measles can cause severe lung infection (pneumonia) and brain inflammation (subacute sclerosing pan-encephalitis, SSPE). 1 death per 1,000 cases has been reported. Prior to MMR, mumps was the leading cause of viral meningitis and deafness, which can lead to sub-fertility in males and miscarriages in females.

The World Health Organisation (WHO), Centre for Diseases Control and Prevention (CDC) and other global health agencies have unequivocally stated that MMR and all vaccines has no link whatsoever with autism or other similar neurological disorders. All parents and guardians should feel totally reassured by this and not be influenced by anti-vaccine news on social media.

This book is a humble endeavour to address the concerns of parents, guardians and healthcare professionals about immunisation, namely its safety, efficacy and permissibility. The first chapter deliberates on the science of vaccinology and articulates responsible, valid, accurate and contemporary scientific research based on evidence-based medicine and best clinical practices.

Chapter two addresses the religious perspectives towards immunisation, and the issues of ethics and human rights vis-a-vis immunisations. There is a vast repository of Islamic scholarship in relation to health, and the issue

of immunisation has not escaped its scrutiny. Every Muslim healthcare professional is, therefore, duty-bound to convey not only authentic medical information but also to explain and clarify the controversies and confusions from the perspective of Maqasid Shari'ah (the priorities of Islamic jurisprudence).

The misinformation, untruths and myths that abound needs to be debunked promptly. The misplaced fears and concerns of the anti-vaccine community need to be addressed with care, caution and wisdom. Chapter three narrates real life stories, anecdotes and opinions of discourses between anti-vaccination and pro-vaccination groups.

Chapter four on Frequently Asked Questions (FAQ) addresses common enquiries related to immunity, vaccination schedules, the administration of vaccines, myths about immunisations and general concerns related to vaccination. All citations and references can be found at the end of the book.

This blessed month of Ramadan, 1436 AH (2015 AD) has witnessed the culmination of a beautiful and synergistic collaboration between the Federation of Islamic Medical Associations (FIMA), Islamic Medical Association of Malaysia (IMAM), Islamic Medical Association and Network of Indonesia (IMANI, IkramHealth (IH) and Parenting2U. The hard work, patience and tenacity of all the writers and translators have been simply awesome and most admirable. We thank you all whole-heartedly and pray that all your efforts will be bountifully blessed by the Almighty and be rewarded abundantly in this world and the hereafter.

وَإِذَا مَرِضْتُ فَهُوَ يَشْفِينِ

And when I fall sick, He heals me.

- As-Shu'ara 26: 80

Salam Ukhuwah,
Dato' Dr Musa Mohd Nordin
Dr Siti Aisyah Ismail
Chan Li Jin @ Ahaddhaniah

Foreword

KEMENTERIAN KESIHATAN MALAYSIA
Malaysian Ministry of Health

All Praises are for Allah, Lord of the Universe.
We praise Him, and seek His help, and His forgiveness.

Good health is one of the best bounties that Allah bestows on mankind. We who have been rewarded with good health should strive to preserve our health and protect it against what might oppose or alter it. It is a command that Muslims should seek and take appropriate treatment and medicine. It does not contradict the dependence on Allah. Muslim narrated from Jabir Ibn Abdullah from the Prophet (pbuh):

«لِكُلِّ دَاءٍ دَوَاءٌ، فَإِذَا أُصِيبَ دَوَاءُ الدَّاءِ بَرَأَ بِإِذْنِ اللهِ عَزَّ وَجَلَّ»

Every illness has a cure, and when the proper cure is applied to the disease, it ends it, by the permission of Allah Azza wa Jal.

The Prophet (pbuh) also advised Muslims to protect ourselves, warding off a problem before it happens. This is supported by a statement from the Prophet (pbuh), “Whoever eats seven dates of Madeenah in the morning will not be harmed by witchcraft or poison.”

Vaccination is one of the methods to protect oneself from getting infected by pathogens of vaccine-preventable diseases, and prevent severe disease and its complications. History has shown that the Islamic World has used vaccination to prevent disease. Vaccination against smallpox was practised during the Ottoman Empire in Turkey in the 17th century. The technology was then taken and introduced to Great Britain. Later, it was studied and further refined by the Western World, to produce safe vaccines with high efficacy and less side effects.

Many Islamic scholars have agreed that vaccinations are permissible; however, when a vaccine is medically proven to cause harm to the body or its

harmful effects outweigh its protective functions, the vaccination is prohibited. This is in accordance with a hadeeth of the Prophet (pbuh), extracted by Ahmad in his Musnad from Ibn Abbas:

«لَاضَرَرَوَلَاضِرَارَ»

There should be neither harming, nor reciprocating harm.

Over the last decade, it has been clearly demonstrated that vaccines protect children against a number of infectious and dangerous diseases. It has brought down the under-five mortality rate and increased the survival rate of children. However, the optimal effect in the community is only obtained if a large proportion of the population are immunised. This is called herd immunity. It provides protection to children who cannot be immunised, e.g. the newborns, children with cancer and on chemotherapy; and those truly allergic to vaccines components.

Of late, because of the high-quality medical care and low rates of infectious diseases, many parents resort to not vaccinating their children, taking for granted that it is acceptable. There are also many unscientific claims on the web that influence parents, who then opt not to vaccinate. By decreasing the number of people vaccinated in the community, the herd immunity will not be able to protect the unvaccinated. Hence, the risk of infection and outbreak increases; evidenced by the measles outbreaks that occurred locally and in other countries as the bacteria and viruses are still around us. The health and safety of the public at large are extremely important and we should play our role in maintaining it.

Scientific evidence has shown that vaccination or immunisation programmes are the most cost-effective public health interventions. Vaccines are the most effective tool we have to prevent infectious diseases, and the benefits of immunisation clearly outweigh its risks. This book clearly illustrates the benefits and risks of immunisation. I truly believe that the information presented in this book would guide readers in making informed and wise decisions in providing immunisation to our children. Immunisation is a valuable investment on the health of future generations. It is the community's responsibility to keep all our children safe.

Datuk Dr Noor Hisham Abdullah
Director General of Health Malaysia
Ministry of Health Malaysia
13 July 2015

Foreword

Federation of Islamic Medical Associations

الاتحاد العالمي للجمعيات الطبية الإسلامية

23 Ramadan 1435 / 10 July 2015

Assalamualaikum

Despite impressive improvements in health and longevity in the 20th century, substantial health disparities exist between countries. Today, people living in the poorest countries of the world live 30 years less than those living in economically-advanced countries.

Unfortunately, the overall healthcare status of a large number of Muslim countries lags behind the norm, especially in terms of preventive health and human development index.

Immunisation, especially of children, against vaccine-preventable diseases has revolutionised the outcome of preventive health, thereby markedly reducing the morbidity and mortality in children.

This well-written book, “Immunisation Controversies - What you should really know” deliberates very carefully the science of vaccinology and the ethical, human rights and religious issues related to immunisation.

More specifically, the contributors have conducted careful research to put forth the authentic Islamic perspectives of immunisation. This, I hope, would further enhance an in-depth understanding of the subject of immunisation in the light of Islamic principles, and help to clarify the various misunderstandings and false propaganda prevalent in Muslim societies.

This effort is a most commendable and pertinent contribution considering the current wave of anti-vaccine movement around the world.

It also displays the excellent collaboration between the Islamic Medical Association of Malaysia (IMAM) and the Islamic Medical Association and Network of Indonesia (IMANI), two very active affiliates of the Federation of Islamic Medical Associations (FIMA).

We are very proud of your achievements and pray that Allah (swt) would reward you bountifully in this blessed month of Ramadan, 1436 AH.

Dr Tanveer Zubairi
President
Federation of Islamic Medical Associations (FIMA)

Foreword

Indonesian Pediatric Association

The National Immunisation Program in Indonesia was established in 1977. It commenced earlier for smallpox and BCG, but was not integrated in the Ministry of Health's programme. The government, through the Ministry of Health, continues to improve children's right to live and provide much-needed vaccinations by increasing the number of vaccines gradually.

To date, the National Immunisation Programme covers Hepatitis B, Polio, Diphteria, Tetanus, Pertussis, Haemophyllus influenzae B and measles. Many more vaccines are necessary to to protect children against infectious diseases, but the government has not been able to provide all of them for free. With the help of other parties, the government continues to find ways to provide more vaccine types.

It is crucial for parents and the public to have the correct information and knowledge about vaccines and vaccination. Information from the media can sometimes be confusing and misleading. Adding on to the confusion are groups of people who propagate doubt and misconceptions about vaccines and their benefits. This has led to increasing numbers of unvaccinated children. Parents and adults forget that it is the children's right to be vaccinated to protect themselves against fatal and debilitating infectious diseases.

We highly recommend "Immunisation Controversies – What You Really Need to Know", which is a compilation of articles written by experts who are well-versed in health and shari'ah perspectives. Written in simple and clear language, it will help educate parents to choose what is best for their children. Parents will be less likely to reject vaccination for their children after reading this book.

We would like to congratulate IMANI and IMAM for this tremendous effort and for the reprint of "Immunisation Controversies – What You Really Need to Know". May Allah continue to provide guidance to us always.

Central Board,
Indonesian Pediatric Association

Foreword

Asia Pacific Pediatric Association (APPA)

There is no doubt that vaccination has contributed directly to the eradication of smallpox, the reduction of numerous infectious diseases and related congenital malformations. We are also close to eliminating polio from our midst. Many Asia Pacific countries have announced immunisation uptakes in excess of 90%.

In recent years, however, we have seen a slow decline in vaccine uptake, resulting in many unnecessary outbreaks. Vaccine hesitancy and refusal resulting from loud voices of anti-vaccine groups have caused this worrying trend. Other than a few reputable portals such as the Center for Communicable diseases and prevention (CDC), the World Health Organisation (WHO) and the Malaysian Ministry of Health's Immunise4Life (www.ifl.my), there is no real buzz for immunisation. Without these, all the work done over decades in infection control would go to waste.

The anti-vaccine lobby has now taken on a religious stance, using spiritual opinions as supporting arguments. With the current trend of increased religious awakening in many countries especially among Muslim-majority nations, it clearly takes more than just medical knowledge to convince people of the advantages of immunisation.

'Immunisation Controversies – All you need to know' tackles this religious fervour by discussing issues related to vaccination and the religion. The arguments are backed by appropriate Quranic texts, the Prophet's (peace be upon him) hadiths and fatwas or edicts of religious scholars. It explains the science of Vaccinology from religious perspectives, plus gives a human face to vaccination by relating stories of diseases averted.

No other book on vaccination encompasses so much. Every parent who has any doubt should read 'Immunisation Controversies' before they decide not to vaccinate their children.

Dr Zulkifli Ismail
President,
Asia Pacific Pediatric Association (APPA)

Foreword
Islamic Chaplain

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

Imam Yahya Adel Ibrahim

الشيخ يحيى عادل إبراهيم

With the Name of Allah, I begin by invoking Divine Greetings and Peace upon the Messenger of Allah.

One of the most vital decisions we make as parents, especially those of us without medical training, is whether to vaccinate our children fully, partially or at all.
All of these choices are valid but, since vaccines, like all medical procedures, can carry with them the possibility of serious injury or death, we need to be able to make our choice with the best available information and in tune with our religious and ethical obligations.

Dato' Dr. Musa Mohd Nordin and Dr. Siti Aisyah Ismail and Chan Li Jin are experts who bridge the gap between Islamic frameworks that include Shariah compliance, Maqasid, Fatwa and up-to-date medical research.

"Immunisation Controversies – What You Really Need To Know" is their collaborative effort, which cuts through the medical jargon and Shariah jurisprudence to provide the reader a complete understanding of the religious, medical, societal and ethical issues that allow parents to make an informed decision.
Along with the extensive medical research, they have collated religious edicts (FATWA) from a wide range of cultural, regional and ethnic backgrounds, spanning Asia, Africa, Europe and the Middle East.

The information provided is substantial, nevertheless, accessible to those new to both the medical research and the Shariah jurisprudence.

I endorse their finds and acknowledge their unwavering persistence to educate, debunk and clarify the issues that unnecessarily deter parents from protecting their children with essential immunisations.

In Allah we place our Trust and upon Him we rely,

Imam Yahya Adel Ibrahim
Islamic Chaplain
University of Western Australia &
Curtin University

Foreword

Da'wah Institute of Nigeria, Islamic Education Trust

The preservation and enhancement of life and public health are among the fundamental objectives (maqasid) of the Islamic way of life. To this end, vaccinations and immunisation programmes are among the most cost-effective public health interventions for over 28 diseases, with the resultant effect of preserving the lives and livelihood of millions of people each year.

Regretfully, many Muslim communities are ignorant of the benefits of vaccines. They have often even been among the most resistant to the adoption and support of immunisation programmes. Consequently, the lives of millions continue to be put at risk of vaccine-preventable diseases, along with the attendant emotional, social, psychological and material costs to families and communities.

Many Muslims are not aware of the fact that numerous fatwa councils, scholars and "those in the know" (Alh al-Dhikr) have supported the use of vaccines and immunisation programmes.

Many well-intentioned but dangerously ill-informed Muslims have followed the misguided advice of anti-vaccine activists and conspiracy theorists instead of professional medical associations and fatwa councils who have studied and concluded on these concerns and controversies for decades. In collaboration with various healthcare specialists, competent Muslim jurists and fatwa councils have given rulings in favour of vaccines and immunisation programmes in the interest of the well-being of the general populace (maslahah).

As with all medical interventions, there will always be some degree of undesirable side-effects. However, the scientific community, Muslim jurists and fatwa councils have concluded that the confirmed and certain benefits to society as a whole far outweighs the probable harm to comparatively very few individuals. Consequently, they have also concluded that some vaccines should not just be regarded as encouraged, but if necessary, made mandatory by law in the interest of the greater good of all (maslahah). Unfortunately, those who are most in need of it are not aware of it.

This life-saving book – Immunisation Controversies: What you really need to know - does far more than its humble title suggests. It is arguably the most comprehensive and well-referenced encyclopedia of scholarly Muslim responses to all the major doubts, controversies, myths, questions and skepticisms that have ever been raised about vaccines and immunisation. Reading this book is itself an intellectual immunisation programme needed to develop the required immunity against the confusion surrounding the immunisation controversy. Hopefully, for Muslims at least, it will be the last shovel of sand on the grave of a controversy that has claimed too many lives.

As more research goes into preventive medicine and better vaccines, this timely book – if translated and circulated widely – will help to ensure that the costly mistakes of the past are not repeated anywhere in the Muslim ummah, insha'Allah.

This book which is a product of the collaborative effort of members a few major Islamic medical associations and NGOs, must be commended and supported by all governments, Muslim community leaders and scholars.

May Allah bless this effort and make its positive impact to healthcare go much further than anyone could ever imagine – jazakum Allahu khairan!

Nuruddeen Lemu
Director, Research and Training
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Chapter 1

What The Experts Say

The History of Immunisation

Chan Li Jin @ Ahaddhaniah

Vaccination is an essential part of strenghtening your immunity against deadly diseases. The widespread use of vaccination these days has helped control the spread of diseases and eradicated many deadly diseases. In many countries, babies are immunised from birth and followed up regularly in baby clinics for their shots to ensure that they are given the necessary early protection for life.

It has become so common that few have stopped to think how vaccination started and what lies behind those life-saving jabs. Knowing the history of vaccination will help us appreciate the ingenius idea of fighting infection with germs.

Fighting germs with germs

As early as 429 BC, Greek historians observed that those who survived smallpox became immune and were not reinfected. This led some Indian Buddhists nuns in 1000 BC to think that perhaps they could prevent people from diseases by deliberately infecting them, so that they will not contract the disease later which could prove fatal.

Thus, a process called 'variolation' was created. The first experiments involved smallpox, one of the deadliest disease around then. Variolation was done in many different ways but they all had the same purpose - to infect people deliberately.

One method was to remove pus and fluid from a smallpox lesion and place it on a needle to be injected under a person's skin. Another method involved peeling scabs from lesions, drying and grinding them to a powder, and letting an uninfected person inhale this powder. The last method was to pick up a small amount of the scab powder and place it directly into a person's vein.

Though the methods seem unorthodox by present medical standards, they succeeded in lowering smallpox mortality significantly. From the 10th century onwards, variolation was already widely practised in Greece and China and

spread around the world. In the 1700s Turkish docktors used variolation to immunise against smallpox.

Lady Mary Wortley Montague, wife of the British Ambassador to Turkey was impressed with the inoculation method against smallpox, brought the idea back to Britain. That inspired the makings of the first smallpox vaccine.

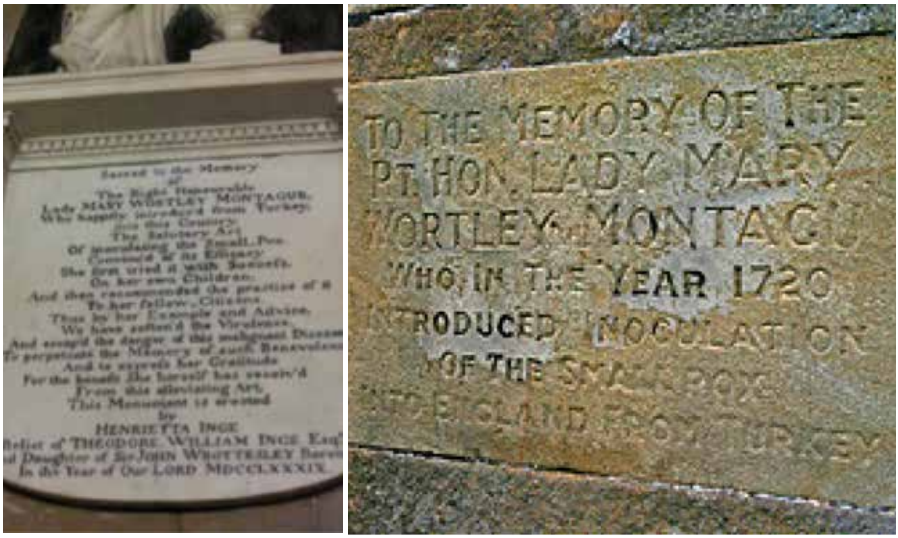


Figure 1: Litchfield Monument

When the cows come home

In the 1790s, a young British doctor by the name of Edward Jenner became intrigued by the connection between a horse's disease known as 'grease' and a cow's disease known as 'cowpox'. As someone who had undergone variolation as a child, he became increasingly interested when he saw that the farmers and milkmaids who interacted daily with grease lesions would invariably infect their cows with cowpox.

Cowpox had all the similar traits of smallpox but is not fatal, showing that it is a milder strain of smallpox. Cows infected with cowpox would be unwell for several days and develop spots on their skin which would subside after a few days, leaving small scars.

In 1796, Jenner experimented by infecting a small boy with cowpox. When the boy recovered completely, he tried infecting the same boy with smallpox by injecting smallpox pus under his skin. As expected, the boy did not catch smallpox, proving he had immunity from it.

Jenner knew then that cowpox could be used as prevention against smallpox and the practice started spreading. It eventually came to be called 'vaccine', after 'vacca', the Latin word for 'cow'. By the 19th century, vaccination laws were established in Europe and United States and by the 20th century, it had become a worldwide practice.

The last known case of smallpox was recorded in 1976 in Ethiopia. By 1980, scientists announced that the vaccine had successfully eradicated smallpox from the world. The only smallpox virus is now found only in freezers in laboratories at the Centers for Disease Control and Prevention (CDC) in Atlanta and the Institute for Viral Preparations in Moscow.

Further development

By 1885, other scientists who had been inspired by the success of the smallpox vaccine began to experiment with other viruses, hoping to come up with similar vaccines. Louis Pasteur successfully developed a vaccine for rabies in 1885 and Von Behring introduced the diphtheria vaccine in 1895.

More vaccines were created over the century; the plague vaccine in 1897, pertussis vaccine in 1926, tuberculosis and tetanus vaccine in 1927, yellow fever vaccine in 1935, injectable polio vaccine in 1955, the oral polio vaccine (OPV) in 1962, measles vaccine in 1964, mumps vaccine in 1967, rubella vaccine in 1970 and hepatitis vaccine in 1981.

Due to the compulsory vaccination of children in most countries worldwide, outbreaks of these diseases have been reduced drastically. In spite of that, vaccination is still necessary as people who travel to countries where the disease is still rampant may catch it and bring it back to local shores. Vaccination for a disease will be stopped only when scientists are absolutely sure that the disease, like smallpox, is eradicated.

On home ground

In Malaysia, the smallpox vaccine was the first to be introduced by the World Health Organisation (WHO) in 1950. The triple antigen (DTP- diptheria, tetanus, pertussis) vaccine followed shortly in 1960.

In 1947, health departments started giving tetanus toxoid vaccination to pregnant women and the BCG (for tuberculosis protection) became compulsory for newborn babies in 1961. The oral polio vaccine was introduced in 1972 after a polio epidemic, followed by the measles vaccine in 1982.

In 1986, rubella vaccination became compulsory for all girls and the viral hepatitis vaccine, hepatitis B, was given to all newborn babies in 1989,

lowering cases of all these diseases significantly throughout the country.

Local studies showed that Haemophilus influenza B caused 50% of the bacterial meningitis in Malaysia. The Hib vaccine was introduced in 2002, together with the combination MMR vaccine.

With Malaysia being polio-free since the mid 1980s and in an effort to reduce the adverse reactions of the whole cell Pertussis (wP), Malaysia introduced the pentavalent DTaP-IPV-Hib vaccine, which incorporated the injectable polio vaccine (IPV) and the acellular pertussis (aP) vaccine in 2008.

Researchers are continously coming up with newer vaccines or improved versions of existing ones such as the DTaP, an advanced version of the DTwP (diphtheria, tetanus, whole cell pertussis) vaccine. Scientists found that the DTaP vaccine has lower side effects of high grade fever, febrile convulsions and irritability, making it a preferred choice over the DTwP vaccine.

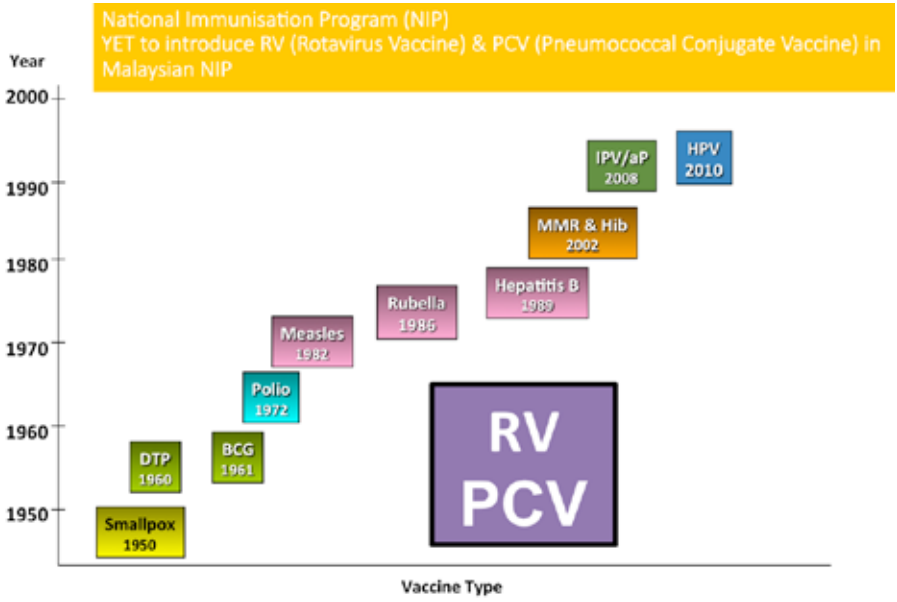
The human papillomavirus vaccine (HPV) to protect against cervical cancer was introduced into the NIP in 2010. Two very important vaccines that have yet to be included in the NIP are the pneumococcal conjugaate vaccine (PCV) and the rotavirus vaccine.

Recent developments have also seen new vaccines for chickenpox, hepatitis A, influenza and meningococcal disease reaching local shores, giving our children even more protection.

A disease-free world

With vaccinations, the diseases that used to ravage the world and cause pain and death will slowly be phased out in time to come. Imagine, your great-grandchildren might never get to face the discomfort of a disease as common as measles, chickenpox or mumps.

There would spell fewer days away from school and more time at play and study. There would be increased health and better living standards. It is definitely worth the jab.


National Immunisation Program (NIP)
YET to introduce RV (Rotavirus Vaccine) & PCV (Pneumococcal Conjugate Vaccine) in Malaysian NIP
Year
2000
1990
1980
1970
1960
1950
Smallpox 1950
DTP 1960
BCG 1961
Polio 1972
Measles 1982
Rubella 1986
Hepatitis B 1989
MMR & Hib 2002
IPV/aP 2008
HPV 2010
RV
PCV
Vaccine Type

The Immunology of Immunisation

Intan Hakimah Ismail, Chan Li Jin @ Ahaddhaniah

Long before the invention of needles and vaccines, people already knew one thing - that someone who had a disease and survived it will not get infected again by the same disease. It was as if the human body had a 'memory system' that forbids repeat visitors in the form of bacteria and viruses.

As researchers started finding out more about the intricate workings of the human body, they found out that this is part of the workings of our built-in defense mechanism, the immune system. Consisting of billions of T-cells, B-cells and antibodies, the immune system has an amazing ability to identify and isolate invading germs once they have entered our bodies.

This is due to the fact that disease-causing organisms contain a particular protein called 'antigens' which can stimulate an immune response. As the antigens move around seeking a host, our antibodies bind themselves to the antigens and lead to their destruction. The immune system then creates a blueprint of the antigen and stores it away in what is known as 'immunological memory'.

These memory cells remain in the blood stream, ready to mount a quick protective immune response against subsequent attacks by the same disease-causing agent. If an infection should recur, the memory cells would swing into immediate action, responding so quickly that we won't even feel any symptoms of the disease. That means that we have become immune to the disease.

The immune system comprises two major sections, the innate or non-specific immune system and the adaptive or specific immune system. Innate immunity is the body's initial defence mechanism. It is not specific to any particular antigen and responds quickly to general signs of infection.

Innate immunity

Innate immunity consists of physical barriers (skin and mucous membranes), physiologic defences (temperature, low pH and chemical mediators),

indigenous micro-organisms or good bacteria that reside on and in the human body, and certain specialised white blood cells (called phagocytes) that are able to track and 'eat' infective germs. However, innate immunity does not produce immunologic memory and does not improve with repeated exposure to germs.

Adaptive immunity

Adaptive immunity is required to develop a more specific response to particular germs that are not targeted by innate immunity. This takes several days to develop. It also increases in strength and effectiveness each time it encounters a specific antigen.

The adaptive immune system 'remembers' previously encountered germs and responds immediately the next time they are infected. In other words, it provides long-term lifelong immunity but may wane over time.

On average, your immune system takes more than a week to fight off unfamiliar germs. Sometimes that isn't quick enough. Stronger germs can spread through your body faster than the immune system can fend them off and you become infected with the disease.

Naturally acquired immunity

Your immune system soon gets its act together and recognises these germs as foreign invaders. It responds by making proteins called antibodies to help destroy the germs that are making you sick. They can't act fast enough to prevent you from becoming sick but helps you get well by eliminating attacking germs.

This is called naturally-acquired immunity. The problem is having to suffer the severe disease symptoms and serious or even deadly risk complications. You may also pass the disease to family members, friends, or others who come into contact with you.

Artificially acquired immunity

Getting to understand how the immune system works has helped scientists come up with ways in which we can deliberately provoke our immunity to work for us. Thus vaccines are born.

Vaccines are in fact weakened forms of diseases. Although we can get natural immunity from actually catching the disease, it is definitely not advisable as many diseases are deadly and we may not live to enjoy our immunity!

Bacteria and viruses are processed by either exposing them to extreme heat or modifying the genetic material of their cells, and these are made into vaccines which are introduced into the body either by injection or orally. As soon as they enter our bodies, our immune system will treat them just like any other antigen or germ, identifying and isolating them.

The difference lies in the fact that these germs can no longer harm our bodies as they are not the real ones that can make us ill. Nevertheless, our immune system cannot tell the difference between a 'real' bacteria and an 'artificial' one, and it is then tricked into believing that we are under germ attack.

As with real germs, the immune system creates an immulogical memory of the germs in the vaccine and the next time we are faced with attacks from the real germs, we are already protected as our bodies are already immune to them.

In other words, vaccines trick your body into building immunity against infectious diseases without causing the actual disease, while teaching your body important lessons about how to defeat its opponents. Vaccines provide artificially-acquired immunity. They prime the body to make protective antibodies without us getting sick and prevent a disease from occurring in the first place.

Two doses of the MMR vaccine offers more than 95% protection against measles, mumps and rubella. Long-term studies suggest that the protection is virtually lifelong. This is the power of immunological memory, which confers lifelong protection against repeated exposure to the three viruses.

Chances are you've been vaccinated against whooping cough (pertussis) when you were small. You may even have been exposed to the germ that causes it, but the vaccine prepared your body to fight off the disease so quickly that you were unaware of the infection.

What about natural antibodies?

Humans receive most of their maternal antibodies through placental transfer of antibodies i.e. immunoglobulin G. This provides passive immunity which wanes as the antibody levels eventually disappears after the first few months. There will still be some Immunoglobin A antibodies transferred in human breast milk, but the levels are much lower.

They protect the surfaces of the mouth, gut and lungs from the entry of various germs. Passive immunity is transient, non-specific and does not contain antibodies which target many of the vaccine-preventable diseases.

Prevention is better than cure

Smallpox was a contagious and deadly disease, causing the deaths of 20–60% of infected adults and over 80% of infected children. When smallpox was finally eradicated in 1980, it had already killed an estimated 300–500 million people in the 20th century.

It is very likely that you never had smallpox. You probably don't know anyone who had smallpox either. In fact, you may not know what smallpox is exactly. Similarly, diseases like polio, diphtheria and German measles (rubella) may be unfamiliar to you. Today, they are all but forgotten, largely because of vaccination.

Some parents today choose not to vaccinate their children because they feel these diseases are no longer present. This is wrong, since diseases can still re-emerge and infect the population if the uptake of vaccines falls, as evidenced by the recent measles outbreaks in the UK and the US, countries which had previously eliminated the disease.

In 1974, the Japanese government stopped vaccinating against pertussis because of public concern about the vaccine's safety. Five years later, a pertussis epidemic in Japan infected 13,000 people, killing 113.

These communicable or contagious diseases are still lurking among us. As Jeffrey Kluger once wrote in TIME magazine, "Vaccines save lives; fear endangers them."

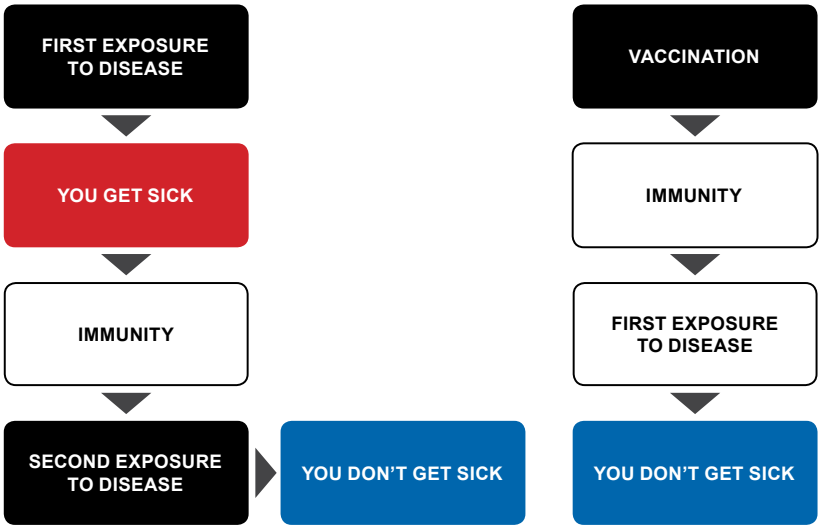


Figure 2: How vaccines work

Evidence - Based Medicine

Know The Essentials

Abdul Rashid Abdul Rahman

How do we know a particular treatment really works? Some of us believe in testimonies of friends or someone we trust. Most testimonies are fully utilised by manufacturers to endorse their products.

If the testimony is scientifically written and published in scientific journals (most never come to this stage), it is called a *Case Report*. Unfortunately, Testimonies and *Case Report* are not reliable.

Let's say a treatment is given to 10 people. We want to know what happened to all 10, not just a select few who felt better after receiving treatment. For instance, 3 out of 10 felt better, and some will consider that enough proof that it worked. However we may not know what happened to the other 7 patients. Maybe they did not get better or even got worse!

This is what *Ibn Sina* (Avicenna) said more than 1,000 years ago. He laid down seven principles before one can claim that a treatment worked. This includes getting the same positive results when the treatment is given to other patients, and being able to replicate the same benefits when another researcher conducts the same experiment.

What *Ibn Sina* did was to establish the foundation of what is fashionably known today as 'Evidence-Based Medicine'. It is a way of practising medicine based on proof obtained by meticulous search for unbiased results.

The research must be done with the sole purpose of discovering the truth about a particular treatment, whether it really works. The kind of research which is considered the 'gold standard' or the highest level of evidence is called a *Randomised Controlled Trial* (RCT).

In a RCT, both the researcher (usually a doctor) and the subject (patients) do not know what was being given (double blind), except that it could either be an active drug which is being tested, or a dummy drug (placebo) which

looks exactly the same. There are several variations of RCT but the aim is the same – to obtain proof that a particular treatment really works in an unbiased manner.

Between testimony *(Case Report) and RCT*, there are many other types of evidence. These include *Expert Opinions* which are not supported by scientific evidence, and research that are observational in nature.

Observational research can be of various types. One is when the researcher looks at a 'snapshot' of patients at one particular point in time *(cross sectional)* and makes observations on possible associations between the patients' disease and possible factors which may have contributed to the disease.

For instance, we gather 100 children with autism and interview their parents. One of the questions asked is whether they had vaccinated their children against polio. We may find that 40% of them did. Our conclusion will be 40% of children with autism were previously vaccinated for polio.

Still, we cannot conclude that the polio vaccination causes autism. We can say the polio vaccination may be associated with having autism. However, if we repeat the observation in 100 non-autistic children, we may discover that 90% of them were vaccinated against polio! In this case there is no association at all between polio vaccination and autism. On the contrary, it may be protective! That, too, cannot be concluded with this type of observational research.

Another type of observational research is when researchers gather 100 autistic children and 100 non-autistic children and then 'look back' (retrospectively) at their health records for potential causes of autism. They may discover that 60% of autistic children came from families with low income as compared to 30% of non-autistic children.

Researchers can conclude that parental income is associated with children developing autism but they cannot conclude that it is a cause of autism. In fact as you can figure out, low-income families may be exposed to other risks which are more likely to be associated with developing autism, not the low income itself.

This type of research is called *Case-controlled* studies and is better in terms of hierarchy of evidence compared to *testimony, case reports or cross sectional studies.*

A better observational study is to follow patients forward (prospectively). We can observe 100 children who were exposed to polio vaccination and compare them to 100 who were not exposed to vaccination for a few

years to investigate how many in each group develops autism. This type of observational study *(cohort study)* is the best type of observation because it looks forward over a period of time.

After a period of follow up, if statistically more vaccinated children developed autism compared to unvaccinated children, we can conclude that vaccination is linked to autism. We still cannot say it causes autism because other factors which are difficult to control in observational research may have contributed. That is why all observational studies are not conclusive when it comes to assessing treatment efficacy.

In science, we say an observational study will, at best, 'generate a hypothesis' and this hypothesis needs to be tested separately in a *RCT*. The history of medicine is littered with examples where observational studies generated interesting observations, but when *RCT* was performed to test the hypothesis, it failed to prove that the observation was scientifically correct.

Examples include giving magnesium after a myocardial infarction to prevent sudden cardiac death, giving post-menopausal women hormone replacement therapy to prevent cardiovascular disease and giving antioxidant supplements to patients with heart disease to prevent further heart disease.

Islam teaches us to be cautious and meticulous when quoting evidence *(hujjah)* in both our religious and worldly affairs. The Prophet (pbuh) prohibited us from conveying news unless we can verify its authenticity. The level of evidence which is of the highest rank in religious discourse is the Quran, followed by the hadith (authentic traditions) of the Prophet (pbuh), *ijma* (consensus), *Qiyas* (deductive analogy) and *Ijtihad* (sound opinion).

Even within the hadith literature, there are various levels of evidence, the highest level being *Hadith Mutawaatir* (directly from Allah) and followed by *Hadith Sahih* (authentic sayings of the Prophet (pbuh)).

Within *Hadith Sahih*, there are also levels of evidence, the best being those authenticated by both Imam Bukhari and Muslim, next by *Imam Bukhari* alone and then *Imam Muslim* alone. Muslim patients and doctors alike should apply these principles of hierarchy of evidence in guiding not only our religious life but also our worldly life, health included.

Figure 3: Level of evidence

How Vaccines Are Made

Chan Li Jin @ Ahaddhaniah

One of your baby's first few experiences as soon as he is born is to have a needle poked into him. Although it is hardly a warm welcome for someone who has just arrived in this beautiful world, it is proven to provide vital protection for your child for a lifetime.

Following that first jab, there are also a series of vaccinations throughout his first year. These vaccinations help keep your baby healthy and safe from deadly diseases that have taken many lives in the past. It has become so easily available that hardly a thought is given to the back-breaking task of producing a single vaccine.

The vaccines that are used currently are categorised into two types - the live vaccines and the killed (inactivated) vaccines. The difference between them lies in the way in which they are made, whether with live or killed micro-organisms.

Live vaccines

This method involves attenuating (weakening) disease-causing organisms under special laboratory care. By ageing or altering its growth conditions, it loses its virulence, or ability to cause disease.

Live vaccines can multiply greatly in the body and induce a large immune response. There is the extremely remote chance that the vaccine virus strain may turn virulent again and induce the disease instead of preventing it, but this potential risk is extremely small. With careful handling and proper storage, live vaccines have the ability to induce long-term immunity with fewer doses.

Examples of live vaccines are the BCG, mumps, rubella, chicken pox, polio, yellow fever, influenza and typhoid vaccines.

Killed (inactivated) vaccines

Here, disease-causing microorganisms are killed by exposing them to heat or chemicals. Once inactivated, the microorganisms are unable to become virulent again, making them a good choice for people who are immuno-compromised.

However, the efficacy of these vaccines is limited because of its relatively weaker response. They also need multiple doses, followed by booster doses, in order to achieve long-term immunity. Adjuvants or other delivery systems are needed to boost their strength.

Inactivated vaccines can be categorised under four main groups:

Whole-cell vaccines

These vaccines are made by culturing the micro-rganisms in the lab. After maturity, the organisms are harvested and killed by heat, radiation or chemicals.

Bacterial vaccines produced using this technology, such as that for pertussis and typhoid, tend to have a slightly higher level of side effects when administered. Viral vaccines, however, seem to work very well with technology, providing a high level of immunology without major side effects. Examples of the viral vaccines are those for polio, influenza, rabies, Japanese Encephalitis and hepatitis A.

Component vaccines / toxoids

Among the first methods used in vaccine creation, this is a seemingly simple method where the actual disease-causing microbe is inactivated or crippled and made into a vaccine. Many of the microbes that infect people are not actually harmful by themselves in their natural surroundings but once they enter the human body, they become hazardous.

One good example is the tetanus bacteria found in soil that is harmless in an oxygen-rich environment. However, in an oxygen-deprived environment (like the human body), they start producing tetanus toxins, a potent poison. As such, the tetanus vaccine is made by inactivating the tetanus germ with formalin, a mixture of formaldehyde and sterile water.The resulting toxoid is then used to make the vaccine.

Another toxoid vaccine is the one for diphtheria. As all these vaccines induce low immune responses, they are usually administered with an ‘adjuvant’, an agent which stimulates the immune system to create a higher level of immunity. The most common adjuvant is aluminium salts.

Component vaccines often need a booster dose every ten years. Other examples of these vaccines include that for influenza and acellular pertussis.

Recombinant vaccines

These vaccines are made by using parts of an organism such as the capsule or the protein cell wall, instead of using the whole organism, as they have fewer side effects. These can be done by taking apart the actual microbe or using genetic engineering techniques in the laboratory to simulate the same circumstances.

These vaccines are also called 'acellular' vaccines and generally need booster doses every few years. However, they are considered to be the safest vaccines as they are not disease-causing and can be used for people who are immunocompromised (with weak immunities).

Examples of these vaccines are those for pneumonia, meningitis and Hepatitis B.

Polysaccharide vaccines

These vaccines are made from the chains of complex carbohydrates molecules taken from certain bacteria. Polysaccharide vaccines can elicit protective antibodies, but only in children above 2 years of age. However, they lack immune memory and do not induce herd immunity.

Recent technology has fine-tuned polysaccharide vaccines, conjugating the polysaccharide molecule with a carrier protein. The result is conjugate vaccines, which can elicit memory response and can be used even for infants from 6 weeks of age. They also confer herd immunity. Examples of these vaccines are those for Haemophilus influenzae type B, pneumococcus, meningococcus and typhoid Vi.

Trials and tests

After a vaccine has been discovered, it will then be put through several years of extensive laboratory and clinical trials to develop it further. The manufacturers will have to prove the vaccine's quality, safety and efficacy in preventing the particular disease for which it was created.

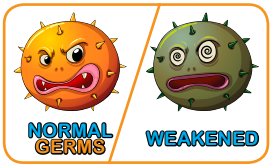
In order to test these vaccines, volunteers from all walks of life and age groups will be put through clinical tests to determine several factors, such as its level of safety, immune response and efficacy. The main purpose is to ensure that the vaccine can effectively protect people from the disease for which it is created, with minimum side effects.

These tests can take up to 3 years for pre-clinical testing, 5 to 7 years of clinical testing and 3 years for registration and licensing. In other words, the vaccines that we so often take for granted often took an average of 20 years before they are allowed to come into contact with us.

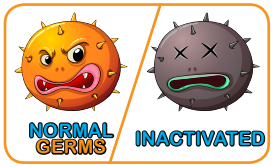
Know The Difference

a. **Bacteria** – uni-cellular micro organisms lacking an organised nucleus, causing diseases such as Hib meningitis, diphtheria, pertussis, tetanus and tuberculosis.
b. **Virus** – microscopic organism causing diseases such as hepatitis A & B, measles, mumps, rubella, polio, chicken pox and small pox
c. **Microbes / micororganisms** – all of the above

Types Of Vaccines



Live vaccines containing live attenuated (weakened) bacteria.



Inactivated vaccines (whole cell vaccine) using dead germs killed either with chemicals, heat or radiation.

The **sub-unit vaccines** (toxoid , conjugate, acellular and recombinant DNA vaccines) using only certain parts of the germs.

Illustration courtesy of www.immunise4life.my

Vaccine Creation, Clinical Trials and Pharmacovigilance

Novilia Sjafri Bachtiar, Musa Mohd Nordin

Vaccines are inactivated or live-attenuated antigens (microorganisms) administered to otherwise healthy people to stimulate their immune system to produce antigen-specific antibodies to specific microorganisms. This provides an individual the immunity to overcome the infection and not become sick when exposed to the same microorganism in the future.

How vaccines are made

Microorganisms such as viruses or bacteria are the raw materials in a vaccine. Microorganisms are cultured in a medium within a specific ambient temperature to promote their growth.

The manufacturing process requires the following steps: harvesting, inactivation, purification, formulation, labeling and packaging. All the processes are in accordance with Good Manufacturing Practice (GMP) to guarantee product quality, purity, safety and efficacy.

Vaccine clinical trials

Every human being has a genetic code, the template that makes us unique. Similarly, viruses and bacteria also have genetic codes of their own. When scientists learn the code for a disease, they can identify the points where a vaccine could make antibodies to fight off viruses or bacteria.

Developing a new vaccine is not easy. In the laboratory, scientists look for clues about how a bacterium or virus causes a disease, because making a vaccine starts with finding the cause. Computer models and lab tests help predict how the vaccine will affect the human immune system.

Once a prototype vaccine is created, the first studies (“pre-clinical studies”) are conducted on animals. Animals are used because their immune systems are similar to that of humans. Tests on animals help predict the effect on people, to ensure a vaccine has no major side effects. If it does, it’s time to start over!

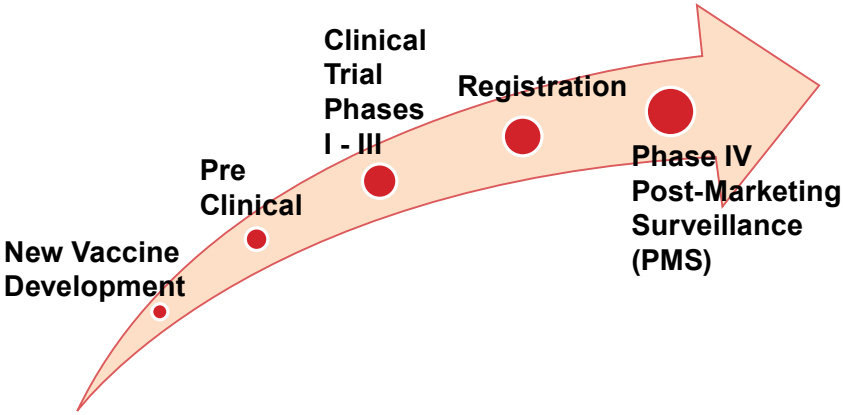


Diagram 1: Vaccine Development and Clinical Trials

About 10-15 years may have passed since scientists first started the research. But the work is just beginning! A vaccine that has been proven safe on animals goes through four phases of trials on people.

Phase I clinical trials

Involves 20 to 100 volunteers receiving the vaccine. Limited to just a few people, because scientists are triple-checking for safety, looking for serious side effects.

Phase II clinical trials

Involves hundreds of volunteers. These trials might take months or years. Safety, safety, safety - that's still being studied. Phase II tests also explore how the human immune system responds to the vaccine and fine-tunes it, defining its most effective use, the best dose for effectiveness and safety, and the right number of doses.

The immune response is often correlated with the production of protective antibodies. The antibody titres will be measured before and after immunisation. The method most commonly used is the ELISA technique.

Adverse reactions are diligently recorded. Local reactions include redness and swelling where the vaccine is given. General reactions, such as fever or muscle aches, are also tracked. Some Phase II volunteers do not get the tested vaccine. Instead, they get either an already-licensed vaccine or another harmless substance (placebo). Placebos and controlled testing enable researchers to compare reactions between immunised and un-immunised people.

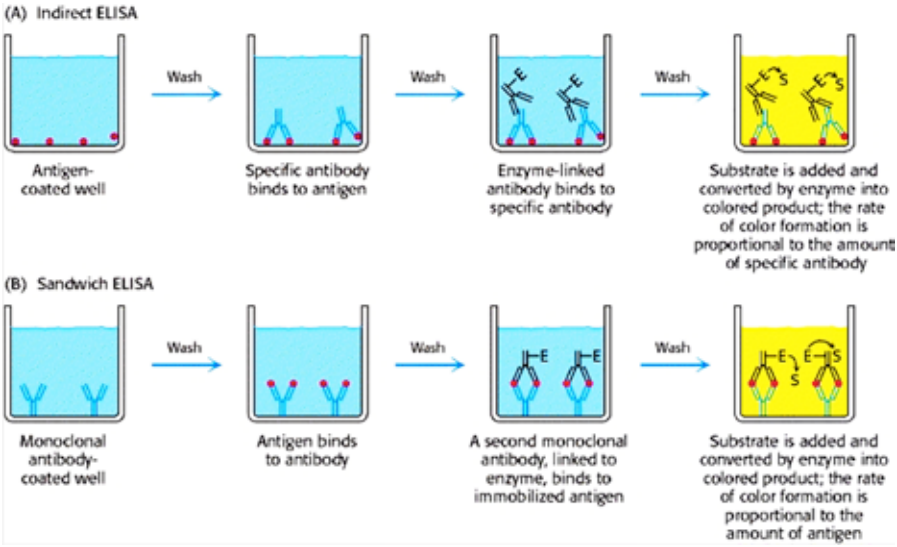


Diagram 2: Basic principles of antibodytitre measurement with the ELISA method. (http://exploreable.wordpress.com/2011/05/)

Phase III trials

Involves hundreds to tens of thousands of volunteers and may last several years. Some volunteers receive another already-licensed vaccine instead of the vaccine under study. That way, researchers can compare one vaccine to another for adverse effects, anything from a sore arm to a serious reaction.

If the proposed vaccine passes the safety and efficacy tests in Phase III, the manufacturer applies for a license from the National Regulatory Authority (NRA) (eg. Food & Drug Administration (FDA) in the US). The NRA consists of a team of specialists comprising microbiologists, chemists, bio-statisticians and medical officers. They review the safety and efficacy data of vaccine trials, product labeling, the manufacturing plant and manufacturing protocols to ensure compliance with GMP standards. A license can be either recommended or refused.

After a vaccine is approved and in production, samples of each lot (separate manufacturing run) of a vaccine must be submitted to the NRA before it can be released for use. Each lot must be tested for safety, potency, and purity to assure uniformity in every dose of vaccine. Every lot is tested individually because vaccines are very sensitive. Changes in temperature during the manufacturing process, for example, can make them lose strength.

Phase IV: Pharmacovigilance

Pharmacovigilance (PV) is the science related to the detection, assessment, understanding and prevention of adverse effects or other drug-related problems. Once the license is issued, Phase 4 tracks the vaccine through a process called post-marketing surveillance (PMS).

The tens of thousands of people who have been immunised with the vaccine under study is continually monitored. Post-licensed monitoring gives valuable information about the vaccine's long-term safety and efficacy.

PMS can be done passively, where the reporting system monitors events reported by healthcare providers and consumers. Active PMS searches, and collects data and measures outcomes using study protocols.

Since 1990, the Vaccine Safety Datalink (VSD) has collected safety statistics on more than 7 million people who have received vaccines. These statistics are a powerful tool for safety assurance.

Sometimes, rare side effects and delayed reactions do not show up in clinical trials. Once a vaccine is released to the public, data on effects and reactions are continually gathered. To make the gathering of information about potential side effects as complete as possible, the CDC and the FDA started a national system called the Vaccine Adverse Event Reporting System (VAERS) in 1990. In 2001, the Clinical Immunization Safety Assessment Centers (CISA) were established. These Centers serve as expert resource centres on vaccine adverse events for parents, patients, and healthcare providers.

Conclusions

Creating a vaccine is a highly complex and regulated process. It may take 10-15 years of research, development and testing before they are approved by National Regulatory Authorities and made available to the public. Diligent and unrelenting pharmacovigilance monitors vaccine long-term safety and efficacy. The exhaustive volume of scientific evidence available confirms that vaccines are safe and should ease one's concerns about how they are made and tested.

Vaccine Ingredients

Musa Mohd Nordin, Arifianto, Mohamad Iqbal Sarwar

The ingredients in vaccines are not easy to understand, resulting in many issues being raised about them. Some are genuine concerns about the safety of vaccine ingredients. Others use these issues to manipulate, distort facts and raise alarm on the purported “poisons” in vaccines.

You can rest assured that the ingredients found in vaccines are minute in amounts, often much below the levels found in the human body and breast milk. Apart from bacterial or viral specific antigens, vaccines may contain preservatives, adjuvants, additives, or manufacturing residuals, causing concern on their safety.

Here we summarise the voluminous research and data available on vaccine ingredients to help correct misunderstandings and allay misplaced fears.

What do vaccines contain?

Vaccine ingredients differ depending on the type of vaccine and how it was made. It is required by law to list the ingredients of vaccines on their product information leaflet. The list of ingredients in vaccines is very comprehensive. It not only lists substances in the vaccine, but also all the substances that were used during the manufacturing process that are later removed from the final product or are present in only tiny amounts.

It is important to understand that vaccines do not contain harmful ingredients. Each ingredient serves a crucial function in the making of the vaccine. They also ensure that the vaccine is effective and safe for use. Every batch of vaccine is tested rigorously for safety.

What are the active ingredients in Vaccines?

The active ingredients are the viral or bacterial antigens that stimulate the immune system to produce antibodies and develop immunity against the disease. An active ingredient may be:

a. Live attenuated (weakened) virus (polio virus, measles and influenza)

b. Virus sub-unit (hepatitis B virus protein, protein L1 human papilloma virus)
c. Bacterial component (polysaccharide cell wall of pneumococcus, Hib, meningococcus)
d. Bacterial toxins (Diphtheria and tetanus toxoids)
e. Live attenuated bacteria (Mycobacterium bovis bacteria in the BCG vaccine)

Mercury

Due to incidences of bacterial or fungal contaminations in the past, it became mandatory to have preservatives for vaccines in multi-dose vials since the 1930s. Mercury, in the form of an organic compound called Thimerosal, was used as a preservative in three different vaccines - diphtheria-tetanus-acellular pertussis (DTaP), hepatitis B and Haemophilus influenzae type b (Hib).

Today, Thimerosal is no longer used in any childhood vaccine, except in the multi-dose influenza vaccine as a preservative, and only in trace amounts. There is more mercury in breast milk than in vaccines. You actually ingest more mercury from food on a daily basis. Thimerosal is derived from ethyl mercury, which is easily removed from the body. The mercury that causes harm is methyl mercury, the environmental toxin that can accumulate in your body and cause harm.

Aluminium

Aluminium is the third most abundant element after oxygen and silicon, and is found in plants, soil, water and air. The amount of aluminium in vaccines is very small. An infant ingests more aluminium through breast milk or formula milk than through vaccines.

Aluminium is used as an adjuvant to boost the immune response to the vaccine. This means we need less antigen to generate immunity and fewer vaccinations. Tested extensively in clinical trials before being licensed, aluminium has been used for many years and has an exemplary safety profile.

Formaldehyde

Our body produces formaldehyde naturally as one of the basic building blocks of protein. We are exposed to far more formaldehyde in the environment (auto exhaust, latex paint, furniture, grocery bags, food, etc) than any vaccine.

Formaldehyde is used to kill viruses or deactivate the toxins in vaccines during the manufacturing process so that they cannot cause the disease.

Most of it is removed from the vaccine, leaving only minute residues in the final product.

Antibiotics

Antibiotics are used in some vaccines to prevent bacterial contamination during production. Examples include neomycin, polymyxin B, streptomycin and gentamicin. Only minute quantities remain in the final vaccine. These trace amounts have not been associated with severe allergic reactions or other adverse effects. Vaccines do not contain antibiotics that are more likely to cause severe allergic reactions (eg penicillin, cephalosporin and sulfa drugs).

Egg protein

Some children are highly allergic to egg protein. The allergic manifestations can vary from life-threatening anaphylaxis (breathing difficulties and shock) to atopic dermatitis (eczema) and hives.

The measles and mumps vaccines are made in cells originally derived from chicken eggs. However, the final vaccine contains only trace amounts, insufficient to cause problems. Even children with severe egg allergies can receive these vaccines.

Influenza and yellow fever vaccines are both made in eggs, and egg proteins are present in the final product. People who are allergic to eggs are cautioned to seek their doctor's advice before taking these vaccines.

Embryo cells

Varicella, rubella, hepatitis A, shingles and rabies vaccine are made in fetal embryo fibroblast cells that were first obtained from elective termination of two pregnancies in the early 1960s. The pregnancies were not aborted for vaccine research. These cells continued growing in the laboratory and no further sources of fetal cells were needed. There is no aborted fetal tissue in the vaccine itself.

Human Fetal Cells were utilised because viruses grow better in humans cells compared to animal cells. Normal cells die after about 50 divisions, whereas fetal cells can go through many more divisions before dying.

If you have concerns whether this is halal (permissible), kindly refer to the fatwas (religious edicts) related to the permissible use of aborted foetuses, surplus embryos in IVF and encephalic babies in the documents of the Islamic Organisation of Medical Sciences IOMS, 1989 (pages 335-340).

Monosodium Glutamate (MSG)

Stabilisers control the efficacy of vaccines by keeping the active ingredients and its components stable (maintaining quality) throughout the production process, transportation and storage, until it is ready for use.

The MSG in vaccines is used primarily as a stabiliser to prevent the vaccine from breaking down when exposed to light or changes in temperature or acidity. Each vaccine dose contains minute amounts of MSG, 100x less than a single serving of MSG in food and 1,000x less than the average safe daily intake.

Vaccination: Beyond Dollars and Cents

Chan Li Jin @ Ahaddhaniah, Sri Rezeki S Hadinegoro

When contemplating the global value of vaccinations, the simplistic approach would be to look at how much it would cause a country to provide vaccinations in the National Immunisation Programme (NIP) and whether it is cost-effective in terms of prevalence and risks.

However, a more holistic approach would be to assess the social, economic and medical impact of vaccines to determine its true value. This perspective would show that the value of vaccination transcends dollars and cents, with far-reaching potential of saving lives, reducing suffering and disability, and improving the quality of life.

Health and wellness in the form of vaccinations serve double-pronged benefits of providing savings (in terms of time cost, productivity, medical fees, transportation, etc) and investment (children being the future of a country). According to Bloom et al (World Economic 2005;6:15-39), a 1% increase in lifespan can improve overall productivity by 4%. In more ways than one, the value of a healthy society is priceless.

Vaccines as medical interventions

A hundred years ago, infectious diseases were the main cause of death globally both in developed and developing countries. Some of the worst outbreaks were the smallpox plague in the 1600s that wiped out entire Native American tribes, the flu pandemic in 1918 that killed over 20 million people globally and the polio outbreak in 1952 that claimed close to 60,000 lives in the United States alone.

With the introduction of vaccines for over 28 infections today, the socio-economic burden of disease has been significantly reduced. With a wide and consistent reach, vaccines have the potential of eliminating death and disability caused by certain infections such as polio, tetanus, measles, pertussis, meningitis, mumps, hepatitis B and human papilloma virus (HPV).

Smallpox, for instance, was declared to be wiped out in 1980, 150 years after its vaccine was first introduced by British physician and scientist Edward Jenner. The advent of vaccination in 1976 was seen as one of 20th century's greatest medical breakthroughs.

Valuing vaccinations

The value of vaccinations can be categorised into four key segments comprising:

Individual value

Good health is crucial during the formative and developmental years of a child, as those are the times when the mind and body are developing at tremendous speeds. Being ill leads to developmental delays, for instance in a child who becomes hearing and speech impaired due to otitis media. Non-immunised children who get infected later on will also miss school days and outdoor activities. Conversely, immunised children get less sick days off for learning and playing, and are also less likely to spread the infection to other children. The World Health Organisation estimates that vaccinations save the lives of more than 2.5 million children. However, another 3 million children die from vaccine-preventable diseases every year.

Collective value

Studies show that when more than 80% of a population has been vaccinated, the risks of infection can be curtailed and the entire population enjoys protection against the disease. This is known as herd immunity, where even the unvaccinated minority will be safe from the disease because the infection has been successfully subdued.

Social value

Justice warrior and 1993 Nobel Peace Prize winner Nelson Mandela once said, "The lives of millions of children have been saved, millions have the chance of a longer healthier life, a greater chance to learn, to play, to read and write, to move around freely without suffering. Immunisation has been a great public health success story". Vaccination reduces mortality and morbidity rates in children and adults, improving the general productivity which can impact the socio-economic development of a nation.

Economic value

Cost-effectiveness studies done by the John Hopkins International Vaccine Access Centre show that vaccinations against pneumonia, diarrhea and meningitis will result in savings of USD1.4 billion in disease treatment costs and lost wages of caretakers amounting to USD313 million. Over the long-term, the savings could add up by another USD61 billion in economic costs of lost productivity due to death and disability. Vaccines for the three diseases

will also avert 3.7 million deaths, saving an estimated USD115 billion for countries at risk. Countries with lower income per capita usually have shorter life expectancies due to poor nutrition, lack of healthcare services and facilities. The economic value of vaccination can also be determined by measuring the disability-adjusted life years (DALY's) of a population using the loss of productive days due to morbidity (illness and disability).

Loss of momentum

Vaccination programmes were highly successful in the 1970s and 1980s, with more than 95% of children receiving vaccination in Malaysia and around the world. The recent years, however, have seen a decline in vaccine take-up, with the advent of anti-vaccine and alternative lifestyle advocates who fuel the fear of side effects among parents.

Many modern day parents believe that clean water, increased hygiene standards and better nutrition have made vaccination unnecessary in this day and age, conveniently forgetting that we are currently protected only because of the herd immunity created over the last few decades of active immunisation against severe diseases.

With more children going unvaccinated due to misinformed parents, there is a possibility of diseases that have long been curbed coming back. One example is pertussis, which is seeing an alarming comeback in the recent years, after seeing a steady decrease over the decade.

The classic proverb 'a stitch in time saves nine' is well applicable to vaccinations. An Australian survey conducted in 2012 by the Influenza Specialist Group (ISG) showed that workers who continue going to work despite the flu end up infecting their colleagues, costing the Australian economy AS$34 billion a year.

Policy makers, the general public, public health officers, even healthcare providers must never forget that vaccination is the most cost-effective approach to public health. Just let the numbers do the talking.

Herd Immunity: An Umbrella for All

Siti Aisyah Ismail, Husna Musa

Have you ever been the only one desperately caught in the rain without an umbrella, and someone with an umbrella rescued you from being drenched? In a situation where those without umbrellas outnumber those with umbrellas, many will be left cold and wet in the rain. Similarly, vaccines, like umbrellas, are means of prevention for rainy days.

'Herd', as we all know, means a large group of animals that live, feed and migrate together. More importantly, they look out for each other to ensure the safety of all in the group. The concept of 'herd immunity' or 'community immunity' aims to ensure that a community is protected against a particular disease when a significant number of the population are immunised.

The theory behind the concept of herd immunity is that when a large number of the population is immunised, the transmission of a communicable disease to a susceptible individual will be largely interrupted. Hence, the incidence of the disease will be significantly decreased. Vaccines act as like barries to the transmission of diseases.

A small proportion of the community cannot be immunised against vaccine-preventable diseases (VPD), such as children who are immune compromised eg children with congenital immuno-deficiencies, with HIV/AIDS and cancers. Very young infants may not respond sufficiently to these vaccines due to their immature immune system.

These vulnerable children will benefit tremendously from herd immunity and are protected from killer diseases. The exact proportion of the community that needs to be immunised to achieve satisfactory herd immunity would depend on the type of disease and its virulence.

The herd effect also indirectly benefits adults, especially the vulnerable geriatric population. After the introduction of the pneumococcal conjugate vaccine (PCV) in the United States in 2000, cases of invasive pneumococcal

disease (IPD) in adults were reduced by over 30-75%. Similarly, Japan experienced a significant reduction in excess deaths attributed to pneumonia and influenza among the elderly when they introduced influenza vaccination amongst school children.

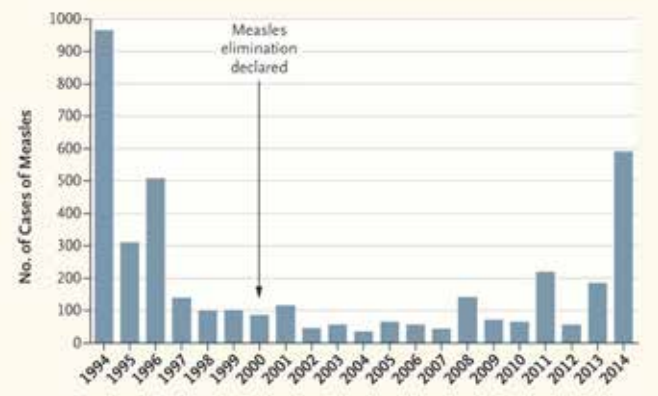
The direct and indirect (herd) effect of immunisation has led to the eradication of smallpox and the virtual elimination of polio. The last case of polio in Malaysia was in the mid-1980s. Except for three countries which are still endemic for polio, the world is close to being polio-free.

In the United States, measles, a vaccine-preventable disease, was eliminated in 2000. Measles is so contagious that 90% of the people around can also become infected if they are not protected. The increased refusal of measles vaccination, partly due to misinformation on the link between measles and autism, has led to rising measles outbreaks worldwide.

There were at least 648 confirmed cases of measles in the U.S. in 2014 - the highest since 1994. The US Disneyland measles outbreak in 2015 has spread to 19 states and Canada. In the 2011 measles outbreak in Europe, 30,000 children were infected, resulting in 8 deaths, 27 cases of measles encephalitis, and 1,482 cases of pneumonia. Most cases were in unvaccinated (82%) or incompletely vaccinated (13%) people.

Think very carefully before you reject vaccination for your children. It may not only harm your own child, but also susceptible individuals in the community, mainly young children and the elderly. Immunisation is an utterly selfless act; since by protecting yourself, you indirectly protect others around you as well.

It is selfish for one not to vaccinate for non-medical reasons, yet continue to enjoy protection from killer diseases because the community as a whole has been herd immunised. It is like selfishly seeking refuge in someone else's umbrella!

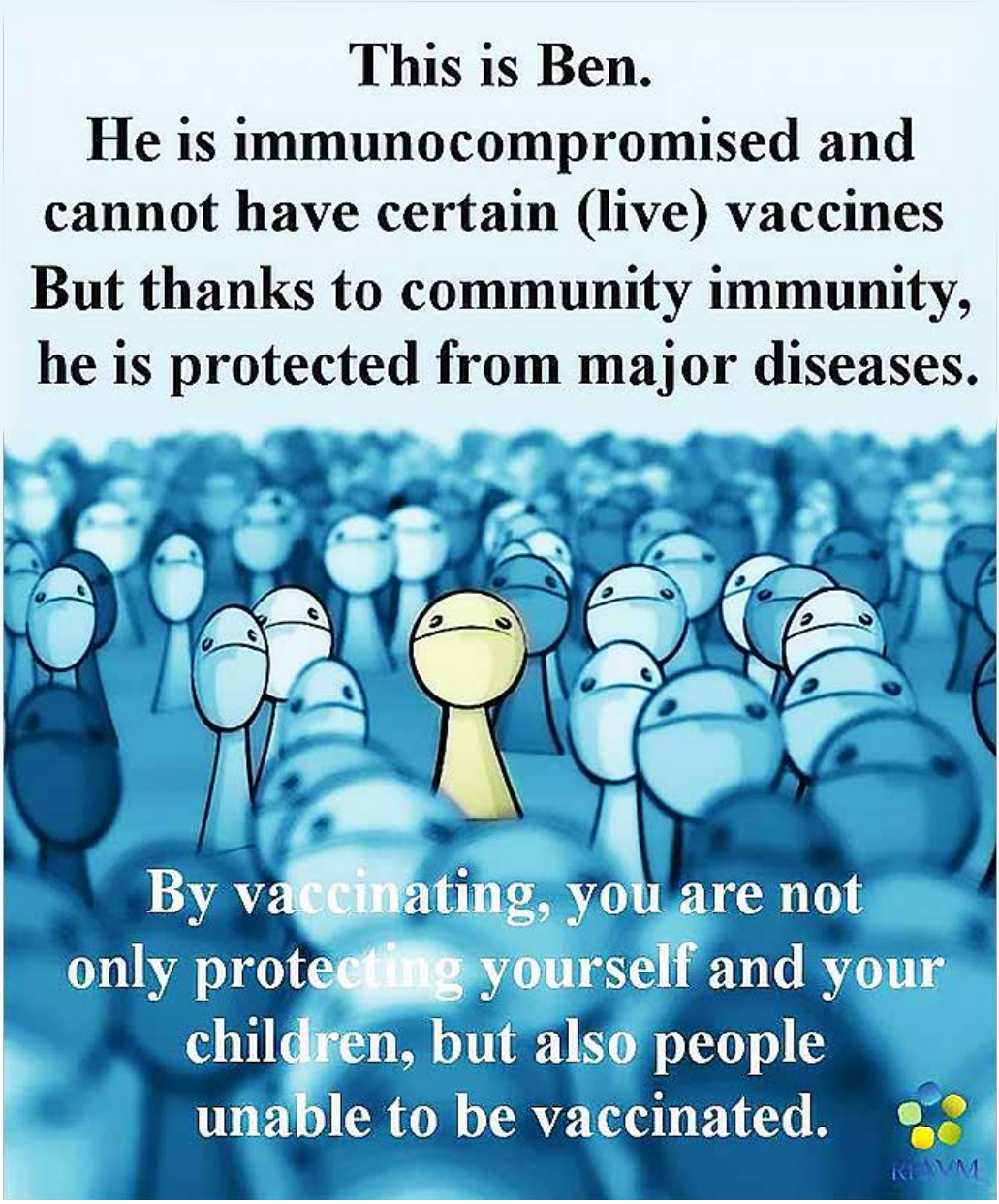


Cases of Measles in the US (1994 - 2014)

How Vaccinations Work

"Herd immunity" refers to the protection a mostly vaccinated population gives to unvaccination groups. The protection weakens as the vaccination rate falls.

Source: National Institutes of Health


This is Ben.
He is immunocompromised and cannot have certain (live) vaccines
But thanks to community immunity, he is protected from major diseases.
By vaccinating, you are not only protecting yourself and your children, but also people unable to be vaccinated.

Adverse Effects Following Immunisation (AEFI) VS Disease Complications

Nurul Itqiyah Hariadi, Musa Mohd Nordin

Vaccines are administered to healthy children and adults. Therefore, they are manufactured to meet the most stringent and highest standards of safety. Before vaccines are licensed, the National Regulatory Authorities (NRA) requires many years of research, clinical trials and testing to ensure safety. This process may take 10-15 years or longer.

However, like any medication, vaccines may cause side effects. Once a vaccine is licensed for use, the NRA continually monitors its Adverse Effects Following Immunisations (AEFI). Any hint of a health problem which may or may not be directly related to a vaccine prompts further investigations by the NRA.

If an AEFI is found to be directly related to a vaccine, the NRA will initiate appropriate action that may include the changing of vaccine labels or packaging, distributing safety alerts, inspecting manufacturers' facilities and records, withdrawing recommendations for the use of the vaccine, or revoking the vaccine's license.

Every individual is unique and may react differently to vaccinations. In the majority of cases, vaccines are effective in protecting the person from disease and cause no side effects. A few may experience mild AEFI such as soreness, swelling or redness at the injection site, low grade fever or slight malaise. In extremely rare circumstances, people may experience more serious side effects, eg allergic reactions. These reactions are so rare that the risk is very difficult to quantify.

If your child develops a reaction to a vaccine, immediately call your doctor. If the reaction is severe, take your child to your doctor or emergency department immediately. Tell the attending doctor what happened, when it happened, and when the vaccination was given.

In recent years, a number of websites providing unbalanced, misleading and alarming vaccine safety information were established, which raised undue fears among parents and patients. Myths and misinformation about vaccine safety can confuse parents who are trying to make sound decisions about their children's healthcare.

Misinformation is rife on the Internet, making it hard to find reliable sources of information. In 2003, the United Nations Children's Fund (UNICEF), WHO and keys NGOs initiated the Vaccine Safety Net Project (VSN) to respond promptly, efficiently, and scientifically to vaccine safety issues of potential global importance. A list of reliable websites on vaccines in 10 different languages can be found on this website - www.who.int/vaccine_safety/initiative/communication/network/vaccine_safety_websites/en/

Vaccination is a very common and memorable milestone in a child's life. As such, all adverse effects are quickly linked to the vaccine as being the cause. While a few sicknesses or reactions that follow vaccination may be caused by the vaccine, many are unrelated events that occur by chance or coincidence.

The majority of events thought to be related to the administration of a vaccine are actually not due to the vaccine itself - many are due to human, or programme error (especially in developing countries). Therefore, the NRA undertakes scientific research that attempts to distinguish true AEFI from unrelated, chance occurrence.

The following table illustrates the likelihood of AEFI for common vaccines.

Vaccine	Risk of AEFI
Hepatitis B	• Anaphylaxis: 1 per 1,100,000 doses
Polio	• Paralysis:1 per 2,500,000 doses of OPV (Oral Polio Vaccine). This risk is not present with Injectable Polio Vaccine (IPV)
BCG (Bacillus Calmette-Guerin), tuberculosis vaccine	• Wound or ulcer at the site of injection that will resolve on its own. It may leave a scar • Osteomyelitis (bone infection): 5 per 100,000 doses
Diphtheria, Tetanus, and Pertussis (DTaP)	• Seizure: 1 per 14,000 doses • Prolonged crying (3 hours or more): 1 per 1,000 doses • High fever (40.5 C or more): 1 per 16,000 doses

Vaccine	Risk of AEFI
Haemophilus influenzae type b (Hib)	• No significant AEFI
Pneumococcus (PCV, pneumococcal conjugate vaccine)	• No significant AEFI
Rotavirus	• Intussusception (a type of gut obstruction): 1 per 20,000-100,000 doses
Influenza	• Anaphylaxis: less than 1 per 1,000,000 doses • Guillain-Barre Syndrome (a disorder of nervous system usually characterised by gradual weakness): 1 per 1,000,000-2,000,000 doses
Measles, Mumps, and Rubella (MMR)	• Anaphylaxis: 1.8-14.4 per 1,000,000 doses • Febrile seizure: 1 per 3,000-4,000 doses, usually on day 6-14 after immunisation, not associated with risk of long term seizure disorder • Immune thrombocytopenic purpura (a decrease in the number of platelets that play an important role in blood clotting): 1 per 40,000 doses which resolves spontaneously • Joint aches, between 1-3 weeks after vaccination, resolves spontaneously in 2 days
Typhoid	• No significant AEFI
Hepatitis A	• No significant AEFI
Varicella (chickenpox)	• Mild varicella rash: 1 per 25-50 doses
Human Papilloma Virus (HPV)	• Fainting can occur in teenagers after vaccine administration. It is recommended to observe 15 minutes in the clinic after HPV vaccine administration

Some conditions such as multiple sclerosis (MS) and sudden infant death syndrome (SIDS) have been reported as AEFI. However, studies and investigations that were conducted did not prove causal relationship between immunisation and these medical conditions.

If the table above is not convincing enough as proof of the very small likelihood of AEFI, take a look at the table below of the reported complications of diseases, the risks our children face if we choose not to immunise.

	Risks caused by diseases
Hepatitis B	• Chronic hepatitis in 90% of babies born to mothers with active hepatitis B infection. Cancer of the liver in 40-50% of people with chronic hepatitis
Polio	• Meningitis, Paralysis: 1-2% • Death: 2-5%
Tuberculosis	• Meningitis (inflammation of the tissue covering the brain) in 13% of children with TB infecting organs outside the lungs, and 5% in those with TB affecting the entire lungs)
Diphtheria	• Airway obstruction with 5-12% risk of death • Inflammation of heart (myocarditis) • Inflammation of nerves (neuritis)
Tetanus	• Risk of death in 25% of infants with intensive care, much higher without intensive care
Pertussis	• Encephalopathy (disease of brain), Fits, Pneumonia • Death: 2 in 1,000
Haemophilus influenzae type b	• Death: 2-5% • Meningitis, Deafness
Pneumococcus	• Most common cause of meningitis, pneumonia and otitis media in children. Risk of death from meningitis is 30% even in developed countries
Rotavirus	• Dehydration and death from diarrhea and vomiting
Influenza	• Often complicated by secondary bacterial infection • Risk of death: 1 per 1,000-2,000 cases in developed countries

Vaccine	Risks caused by diseases
Measles	• Mortality rate: 2-3 per 1,000 cases in developed countries, 10-20 fold in developing countries • Risk of encephalitis (inflammation of the brain): 1 per 1,000 cases in developed countries • Risk of subacute sclerosing panencephalitis (SSPE, a degenerative and fatal neurologic disorder): 4-11 per 100,000 cases
Mumps	• Deafness, viral encephalitis • Risk of orchitis (inflammation of the testis): 17-38%, may result in sub-fertility • May cause miscarriages in girls
Rubella	• Risk of congenital rubella syndrome (characterised by abnormalities affecting multiple organs) in fetus if a pregnant woman is infected during pregnancy (85% in the first trimester, 25-50% in the second trimester)
Typhoid	• Risk of death: 35% in severe typhoid fever
Hepatitis A	• Hepatitis with risk of liver failure • Death: 1 per 300 cases
Varicella (chickenpox)	• Chickenpox that can be complicated by secondary bacterial infection
Human Papilloma Virus(HPV)	• Risk of cervical cancer, anal cancer, or oral (mouth) cancer with HPV infection

Comparing the two tables above hopefully enables us to understand that the likelihood of AEFI is generally very small (with an even smaller risk of serious adverse events), while the risks from vaccine-preventable diseases are serious, some deadly.

Let us make wise and well-informed decisions for our children with regards to vaccination.

Breast Milk And Immunisation – Double The Protection!

Musa Mohd Nordin, Fatimah Berliana Monika, Zulkifli Ismail

Forty thousand children die each day in developing countries; approximately 28 every minute. In many of these countries, 25% of children do not even live long enough to celebrate their fifth birthday. These mortality statistics represent a human tragedy affecting the very young and most vulnerable amongst us.

The United Nations Children Fund (UNICEF) and WHO has identified breastfeeding as a simple, practical and cost-effective child survival strategy to help save the lives of children. Breast milk has secretory IgA, lactoferrin, lysozyme, anti-oxidants and other anti-infective factors which confer early protection against diarrheal diseases and acute respiratory infections, the main causes of deaths. Breast milk also provides optimal nutrition, makes babies brighter, reduces allergies, improves mother's health, is environmentally-friendly and brings cost savings to national economies.

The protection, support and promotion of breastfeeding are important to give our babies the best possible start in life, providing passive immunity for a baby's growth and development. However, it is not the absolute protection against all diseases, as some mothers would like to believe.

Understanding passive immunity

Immunoglobulin G (IgG) is the major immunoglobulin circulating in the blood that provides long-term protection against infection. IgG antibodies 'recognise' germs that we've been exposed to previously, so that they can be destroyed more quickly in the next encounter.

IgG antibodies from the mother are passed through the placenta to her unborn baby during the last three months of pregnancy. The baby does not make antibodies himself. This is called passive immunity. The level of these

antibodies starts decreasing and eventually disappears after the first few weeks or months after the baby is born.

Similarly, the anti-infective factors in breast milk are passed to the baby to provide them with passive immunity. Colostrum, or first milk, is particularly rich with non-specific anti-infective cells, leucocytes, reaching up to 5 million cells/ml in the first four days. This gradually decreases to about 5 thousand/ml after 2 weeks. Thus, anti-infective protection in breast milk is transient and short-lived due to declining levels over time.

Secretory IgA antibodies in breast milk protect the internal surfaces of the body, such as the mouth, stomach, intestines and lungs. They coat the mucous membranes and block the entry of potentially disease-causing infections.

The baby also gets some IgG from breast milk, but the amount of IgG is not sufficient to immunise and protect the baby. Breast milk also does not contain antibodies specifically targeted at infectious diseases like tuberculosis, diphtheria, tetanus, pertussis, polio,measles, Hib and rubella. Thus, breastfeeding alone does not provide sufficient immunity to childhood diseases.

While breastfeeding appeared protective against acute lower respiratory infection, it does not protect against pertussis (whooping cough). In the absence of immunisation, in pertussis endemic countries, breastfed infants had similar hospitalisation rates for pertussis-like illnesses as bottle-fed babies. Pertussis is associated with many lung and brain complications and can be lethal in young infants.

What about active immunity?

So passive immunity conferred by breast milk is temporary and does not protect against infectious diseases. The protective antibodies wanes within a few weeks or months (no immune memory) and it does not stimulate the formation of new and effective antibodies.

Exposure to wild germs will induce the formation of protective antibodies which are specific against the disease. This is called induced natural active immunity. Unfortunately, the natural infection may make the child severely sick.

He may suffer from various complications or even death, such as paralysis from natural polio infection, pneumonia from natural pneumococcal infection, meningitis from Hib infection, deafness from natural mumps infection or liver cancer from natural hepatitis B infection. If he survives the disease, he

will develop immune memory and be protected when exposed to the same germs again. But it is a high price to pay for acquiring natural immunity.

Immunisation mimics the protective and memory attributes of natural immunity but without the child actually being sick with the disease. This is called vaccine-induced active immunity.

Unlike passive immunity provided by breast milk, active immunity rapidly activates the body's production of IgG antibodies that can fight off invading bacteria or viruses following immunisation. Most vaccines provide high levels of protection. The MMR vaccine, for instance, provides more than 95% protection against measles, mumps and rubella after two doses. Unlike breast milk's passive immunity which is transient and short lived, vaccine-induced active immunity is long lasting, conferring lifelong protection for some diseases.

Historically, polio paralysed thousands of children, rubella (German measles) caused birth defects and mental retardation, Hib was the leading cause of meningitis, pneumococcus was responsible for most pneumonia deaths, while mumps was the main cause of childhood deafness.

The advent of vaccines drastically transformed mortality and morbidity statistics from vaccine-preventable diseases. Children have benefitted more from vaccines than from any other health preventative programme in history.

Clearly, breast milk is not a universal protector against infections. Breastfeeding is important for your child but is no substitute for getting your child immunised on time.

Breast milk is, however, an important adjunct to immunisation. Research shows that breastfed babies produce higher levels of antibodies when vaccinated compared to formula-fed babies.

Pneumonia – The Number 1 Killer of Young Children

Musa Mohd Nordin, Husna Musa

In 2008, an estimated 8.8 million children died before their fifth birthday. One in 5 of the deaths was due to pneumonia. Pneumonia kills an estimated 1.4 million children under the age of 5 years every year – more than deaths from AIDS, Malaria and TB combined. One child dies from pneumonia every 20 seconds. Most of these pneumonia deaths occur in developing countries.

In Malaysia, the prevalence of pneumonia in children under 5 years is between 28-39%. It is the fifth highest cause of death in Malaysian children, contributing 4% of under-5 deaths.

This global tragedy becomes even more depressing by the universal finding that only 1 in 5 caregivers could recognise the danger signs of pneumonia, and only 1 in 5 children with pneumonia actually received life-saving antibiotics! Pneumonia often mimics the common cold, starting with a fever and cough. Parents may not realise that their children's condition may be much more serious.

In their 2008 GAPP document, WHO and UNICEF outlined the Global Action Plan for Prevention and Control of Pneumonia with these 3 key elements:

- **Protection:** Handwashing, exclusive breastfeeding, improved nutrition, avoidance of indoor pollution (smoking, stove fires), reducing risk factors (eg HIV).
- **Treatment:** Improving access to healthcare and appropriate management at health facilities.
- **Prevention:** Immunising against germs eg measles, pertussis, influenza, haemophilus influenza B (Hib) and pneumococcus.

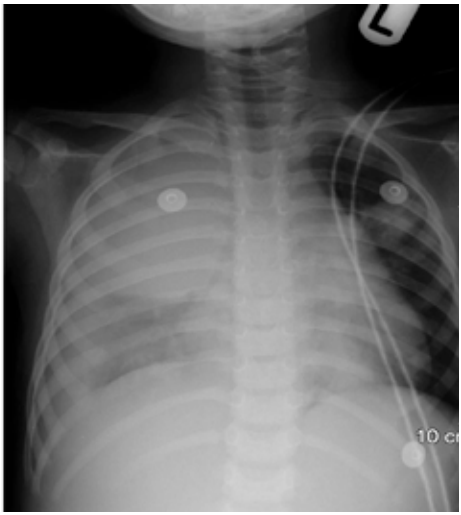
The implementation of GAPP interventions to Protect (breastfeeding), Prevent (vaccinations) and Treat (case management) in 68 high child mortality countries would potentially avert up to 1.2 million post-neonatal pneumonia deaths annually by 2015, significantly contributing to the Millennium Development Goal 4 (MDG4).

Pneumonia vaccines have substantially reduced pneumonia morbidity and mortality in children. Malaysia introduced the pertussis, measles and Hib vaccines in 1960, 1982 and 2002 respectively. However, the influenza and pneumococcal vaccines are not in the Ministry of Health's National Immunisation Programme (NIP).

Unfortunately, the pneumococcus is the number 1 cause of pneumonia deaths. More than 50% of pneumonia deaths are due to pneumococcus. Apart from pneumonia, the pneumococcus can cause other serious diseases, namely meningitis (inflammation of the lining of the spine and brain), bacteraemia (germs in the blood) and other less invasive but nonetheless burdensome in terms of morbidity and complications - otitis media (inflammation of the middle ear) and sinusitis (infection of the sinuses).

For every case of pneumococcal meningitis each year, there are probably 1,000 cases of pneumococcal otitis media. The cases below illustrate the spectrum of diseases caused by the pneumococcus:

Complete whiteout of right side of lung due to pneumonia caused by pneumococcus which is preventable with pneumococcal vaccine



Case 1

A 3 year-old girl presented with a 3 week history of coughing and 6 days of high grade fever. Not responsive to oral antibiotics and was referred to hospital. On admission, she was febrile, breathing rapidly and was grunting. Her CXR (attached) showed pneumonia of the entire right lung, with fluid collection. The lung fluid was drained and it grew the pneumococcus. She required respiratory support in the Intensive Care Unit (ICU) for 5 days,

oxygen for another 5 days. Her repeat CXR showed residual lung damage. She was hospitalised for 4 weeks.

Case 2

A 5-month-old girl was less fortunate. She had fever 36 hours prior to admission, was feeding poorly and vomited twice. She was noted to be more sleepy. Both her blood and cerebrospinal fluid grew pneumococcus. Despite ventilation in the ICU, intravenous antibiotics and close monitoring, she died within 10 hours.

Thus, vaccination against invasive pneumococcal disease (IPD) is a pivotal life-saving strategy and reduces morbidity because:

- It may prevent children from ever being infected
- It reduces the transmission of the bacteria in the community, thus reducing IPD in other age groups (herd immunity)
- It reduces the need for antibiotics, resulting in lower rates of bacterial resistance

First introduced in the USA in 2000, the pneumococcal vaccine has been shown to be highly efficacious across populations studied in the USA, American Indians, Gambia and South Africa. The pneumococcal conjugate vaccine (PCV) is the first vaccine in 20 years to show a significant reduction in all-cause child mortality in a major randomised, controlled clinical trial in the Gambia, where 7 deaths were prevented for every 1,000 children vaccinated.

WHO's position statement in 2007 declared, "Recognising the heavy burden of pneumococcal disease in children and the safety and efficacy of PCV7 in this age group, WHO considers the inclusion of this vaccine in national immunisation programmes as a priority".

Looking at the annual world birth cohort, most of the children immunised were in developed countries. More than 100 countries have now incorporated the PCV in their NIP, including Singapore, Macau, Hong Kong, Philippines, Pakistan, Brunei and Japan in Asia.

Since the PCV arrived in Malaysia in October 2005, less than 20% of our infants have been vaccinated against the pneumococcus. Virtually all who were vaccinated were in the private health sector. The vaccine is not available to 70-80% of Malaysian children who visit government health centres for scheduled immunisations, since the PCV is not in the NIP.

The Asian Strategic Alliance for Pneumococcal Disease Prevention (ASAP) has been at the forefront advocating for the inclusion of PCV in the NIP in Asia Pacific countries. With the Malaysian Paediatric Association (MPA), her Malaysian partner, they were part of the Global Coalition against Child

Pneumonia established in 2009, to advocate for global action to protect against, effectively treat and help prevent pneumonia.

Their annual event, World Pneumonia Day (WPD), is held on 12 November every year to raise awareness on the increasing toll of pneumonia on children, appropriately labeled by WHO and UNICEF as 'The Forgotten Killer of Children'.

In 2013, ASAP and MPA joined forces with MyHealth Outreach, a parent-led organisation, in the 'YES to Pneumococcal Protection' campaign to urge the Malaysian government to include the pneunomococcal vaccine into the National Immunisation Programme so that all babies could have access to it. The campaign reached out to parents, healthcare professionals, childcare providers and policy makers via health talks, petition boxes, vaccine donation programmes and media interviews.

The campaign is hopes to induce a herd immunity among Malaysians against the pneumococcus, at the same time bring down the costs of the vaccination while making it available for free to lower-income families.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UNITED NATIONS FOUNDATION
The Power of Vaccines
Invest in a healthier world. Immunize a child.
1 in 5 children around the world lack access to life-saving vaccines.
Timely vaccination is one of the simplest and most effective ways to give every child a healthy shot at life.
Immunization saves 2.5 million children's lives each year.
VACCINATED
FIRST SMILE
FIRST TOOTH
FIRST STEP
FIRST WORD
FIRST DAY OF SCHOOL
NOT VACCINATED
SIGNS OF ILLNESS
DISEASE DIAGNOSIS
SYMPTOMS WORSEN
MISSES SCHOOL
ANOTHER LIFE CUT SHORT
We can save
a child every 20 seconds
Be a Child's Shot@Life
Your voice, your time and your support can change a child's life forever.
Go to ShotatLife.org to learn how.

Prevent Cervical Cancer with HPV Vaccine

Musa Mohd Nordin, Husna Musa

Globally, 500,000 cases of cervical cancers are diagnosed annually. 240,000 women die each year from cervical cancer. 85% of these occur in developing nations.

Cervical cancer is the third most common cancer in Malaysia. Many women have symptoms for many months before reporting to their doctors. The majority of cases are in advanced state upon diagnosis, leading to significant mortality. Most patients have not had a recent Pap test.

Virtually all cases of cervical cancer are caused by the human papillomavirus (HPV). There are more than 100 types of HPV, and about 40 affect the genital areas of both males and females. Infection spreads through sexual contact. Infected person often does not show any symptoms or health problems. In women, regular Pap tests could help detect a HPV infection.

HPV is very common and has been found to infect 1 out of every 2 sexually-active women and men. In most people, the immune system clears the infection naturally within 2 years. The risk of progression to Cervical Intra-epthelial Neoplasia I (CIN 1), a precursor to cervical cancer, is 1 in 6, whereas to CIN 2 or CIN 3 is 1 in 25.

Progression to cervical cancer (without Pap tests) is 1 in 31.With Pap tests, it is 1 in 123. This means women who get pap smears are less likely to have their HPV infection progressing to cancer because it is detected and treated.

HPV types 16 and 18 cause 70-80% of all cervical cancer cases. They can also cause cancer of the vagina, vulva and anus. HPV types 6 and 11 can cause genital warts.

Up to 80% of cervical cancers can now be prevented with the currently available bivalent and quadrivalent HPV vaccines. Additionally, the HPV vaccine offers protection to other forms of cancers such as anal, vulvar and

vaginal cancers, while the quadrivalent vaccine also protects against genital warts. Both vaccines are administered in 3 doses over a period of 6 months.

HPV vaccines protect the body from HPV infections by simulating an immune response similar to an actual HPV infection. This causes the body to produce antibodies that can prevent HPV viruses from infecting cells in the future.

The World Health Organisation (WHO) recommends that boys and girls should receive the vaccination from 11 to 13 years old. Immune response is shown to be better when the HPV vaccine is administered at a younger age.

The WHO Global Advisory Committee on Vaccine Safety concluded that HPV vaccines have a good safety profile. The most common side effect is headache. Other common side effects include fever, nausea, dizziness and pain, redness or swelling at the injection site. Syncope (fainting due to drop in blood pressure) may rarely occur and patients should be monitored for 15 minutes after the injection.

HPV vaccines have been tested and studied all over the world. It is widely used in many countries such as the United Kingdom, Canada, and USA. Since 2010, Malaysia's Ministry of Health has been offering free HPV vaccinations to 13-year old girls in the country, with consent from parents.

There were concerns that HPV vaccines may encourage young people to become sexually active at a young age. Two studies, the latest published in 2012, showed that 12-13 years old American girls who were given the HPV vaccination did not show any increased risk of pregnancy, sexually-transmitted infections or other outcomes related to sexual activity.

HPV Hoax SMS

Some of you may have received an SMS blast from "anonymous" regarding the Adverse Effects of Human Papilloma Virus (HPV) vaccine in Colombia. This person urged parents not to give their consent for HPV vaccination offered by the Ministry of Health (MOH) Malaysia, which has been part of our National Immunisation Program (NIP) since 2010.

The Colombian news is old news published in August 2014 about alleged adverse events in some girls who received HPV vaccine, as part of Colombia's NIP. There was much speculation in the media about the cause of the adverse effects.

Before we address the "safety allegations", it is useful to remind ourselves that:-

- **Cervical cancer is the third most common cancer in Malaysia.**
- **8.7 million women over the age of 15 in Malaysia are at risk.**
- **About 6 women are diagnosed with cervical cancer every day.**
- **Many present at an advanced stage of the disease when the outcome is poor.**
- **Half of them die from the disease.**
- **Almost all cases of cervical cancer are caused by HPV.**

Worldwide Health Authorities' Recommendations on EFFICACY & SAFETY of HPV Vaccine:-

- HPV vaccine is the result of more than 10 years of research and development.
- Its efficacy was established in clinical trials involving more than 25,000 females and males.
- Several real-world outcome studies have supported the efficacy data from the clinical trials.
- Outcome studies in several countries showed a significant reduction in the prevalence of HPV infection and cervical lesions which preceded cancer, following HPV vaccination, thus protecting girls from cervical cancer.
- HPV vaccines have an excellent safety profile.
- Safety has continued to be evaluated in several large post-licensure surveillance studies in more than 500,000 people following administration.
- In March 2014, the WHO's Global Advisory Committee on Vaccine Safety (GACVS) stated that they have not found any safety issue that would alter any of the current recommendations for the use of HPV vaccines, and reaffirmed the favorable benefit-risk profile of HPV vaccines.
- GACVS reiterated "allegations of harm from vaccination based on weak evidence can lead to real harm when, as a result, safe and effective vaccines cease to be used."

http://www.who.int/vaccine_safety/committee/topics/hpv/GACVS_Statement_HPV_12_Mar_2014.pdf

- While no vaccine or medicine is completely without risk, leading international health organizations such as the World Health Organization (WHO), the US Centers for Disease Control and Prevention (CDC), Health Canada, the European Medicines Agency (EMA), the Australia Therapeutic Goods Administration (TGA), have continued to recommend the use of HPV vaccines.
- You are also kindly referred to "Hukum Pengambilan Vaksin Human Papilloma Virus (HPV) - JAKIM, 2012:123-125" following the Muzakarah Jawatankuasa Fatwa Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam Malaysia which met in Melaka from 15 - 17 December 2010.

> ***"Muzakarah bersetuju memutuskan bahawa pengambilan Vaksin Human Papilloma Virus (HPV) yang telah dipastikan tiada unsur meragukan dalam kandungannya dan tidak mendatangkan kemudaratan adalah diharuskan bagi mencegah penyakit kanser pangkal rahim (servik) di kalangan wanita."***

Musa Mohd Nordin
Chairman, Federation of Islamic Medical Associations (FIMA) Advisory Council
Board Member, Malaysian Pediatric Association (MPA) Immunise4life www.ifi.my
Board Member, Muslim Professionals Forum www.mpf.org.my

Excerpt from Berita MPA, Feb 2015

Dengue Fever: Then and Now

Musa Mohd Nordin, Husna Musa

The first report of Dengue Fever (DF) was documented in Malaysia in 1902 and Dengue Haemorrhagic Fever (DHF) in 1962. In 1973, a major dengue epidemic was recorded and DF has since become endemic in Malaysia, with major outbreaks every 3–4 years.

In 1962, Paramesvaran described 41 children with high fever, petechiae (bleeding into the skin), bruising, epistaxis (nose bleeding), a palpable liver, thrombocyto- paenia (low platelet count) and hypotension (abnormally low blood pressure) in Penang General Hospital. Paired sera (a blood test technique) despatched for virology studies at the Institute of Medical Research (IMR) tested positive for dengue.

The problem has since escalated many folds in Malaysia and other parts of the world. Dengue is endemic in over 100 countries and 70% of the global burden is in the Asia Pacific.

Every Malaysian can identify with a family member, friend or someone who has had dengue, was hospitalised for it, suffered from its complications or succumbed to it. It cuts across the economic divide and social strata. As of 31 December 2014, the cumulative number of reported cases was 108,698 and the cumulative number of deaths reported was 215. This was 151% higher than in 2013.

As of 14 November 2015, there were 104,910 reported cases of dengue, 18% higher compared to the same period in 2014 (88,806 cases). The number of deaths is worrying, with 284 deaths as at 14 November 2015 versus 169 deaths over the same period in 2014 – a rise of 115 deaths (68% increase).

A recently published study estimated that Malaysia spent US$73.5 million on its national dengue vector control program in 2010. This figure constitutes 0.03% of the country's GDP and 1.2% of the total government funding for health care in Malaysia in 2010. These vector control activities has not effectively impacted the incidence of dengue cases or mortalities.

The long awaited dengue vaccine is therefore a most welcome breakthrough. Although the overall efficacy (60.8%) is not as high as the efficacy of most paedi- atric vaccines, the dengue vaccine nonetheless demonstrates a clinical efficacy profile which makes it worth considering in our National Immunisation Programme (NIP).

Two large multi-centre studies in Asia (including Malaysia) and Latin America (1,2) showed that the administration of the novel quadrivalent dengue vaccine in healthy children reduced the rate of dengue related hospitalisations by 67% and 80.3% respectively. This would definitely reduce the load on hospitals beds.

The dengue vaccine also reduced the severity of the disease by 88.5% and 95.5% in two landmark trials. Both the reduction in hospital admissions and severity of the disease would further ease the economic burden of dengue. More Malaysians would be spared from dengue morbidity (illness) and mortali- ty (deaths).

Another equally important aspect of the vaccine is that no serious adverse events were reported in either trial.

The impact of the vaccine on public health can be measured against WHO's end points to reduce dengue mortality by 50% and lower morbidity by 25% by 2020. The dengue vaccine, in our opinion, would help us meet these international goals.

A careful epidemiological study of dengue in the community would be able to identify the subsets in the population with the highest rates of dengue disease and be targeted for the vaccine. Individuals previously infected with dengue, produced high sero-conversion rates and broad neutralising antibodies upon the administration of the quadrivalent dengue vaccine, which would therefore obtain better protection from the disease.

Despite intensive campaigns on vector control, transmission and infection with dengue continue to persist. These campaigns should continue to be enhanced but needs to be twinned with a safe and effective dengue vaccination programme. Efficacy trials involving more than 30,000 children shows that we can protect populations from dengue disease and perhaps even reduce the proportion of patients with severe disease.

While awaiting the advent of the "perfect" dengue vaccine, we can act now to immunise the community with the dengue vaccine currently available. We are hopeful that the dengue vaccine would be available for public use by the end of 2015.

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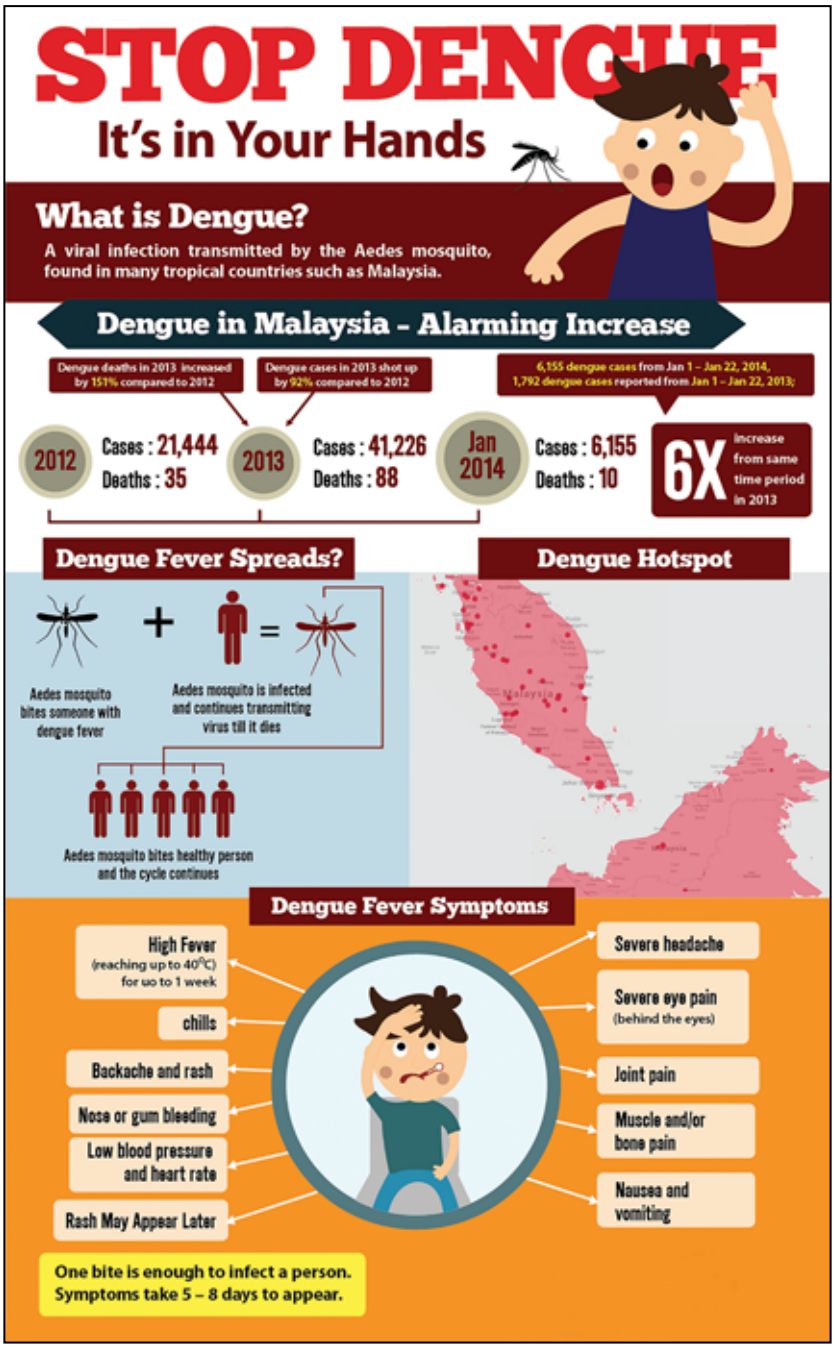
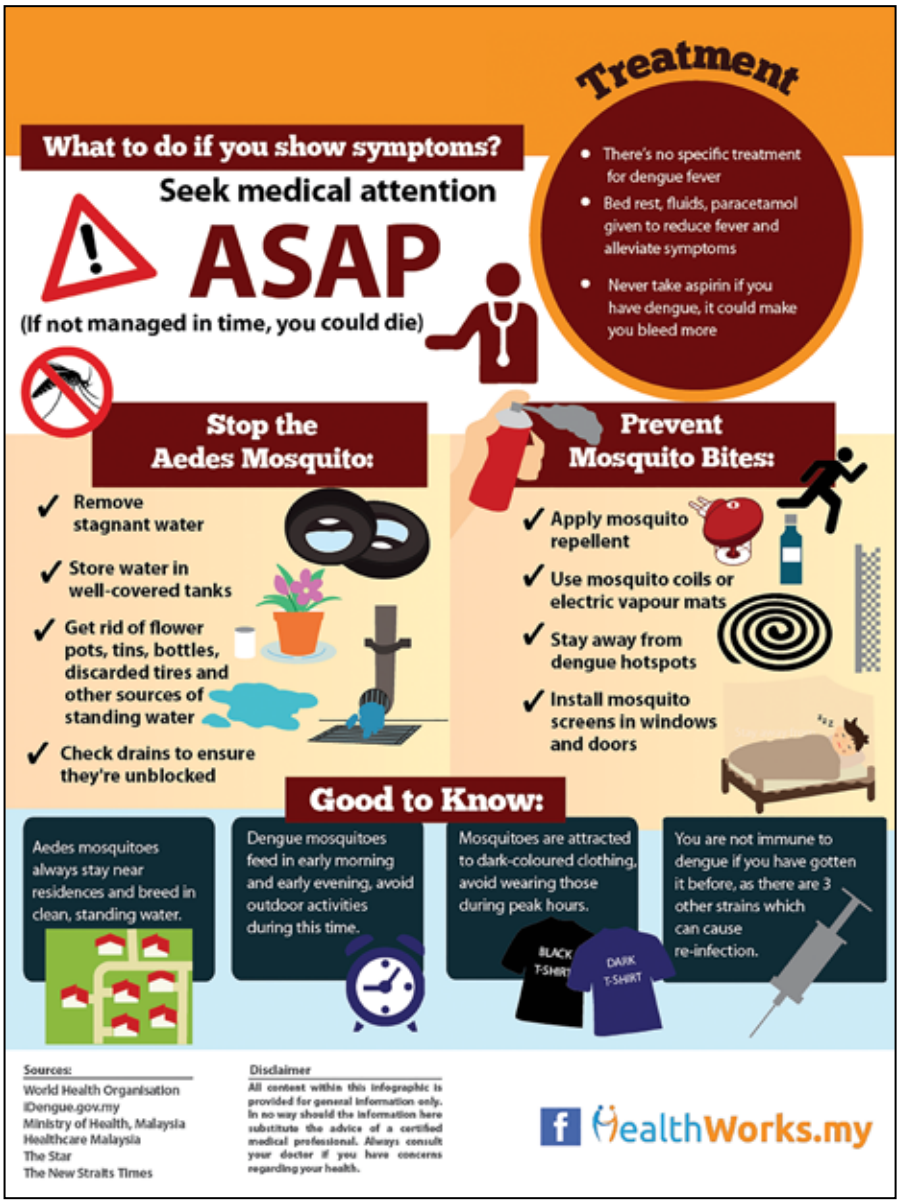

STOP DENGUE
It's in Your Hands
What is Dengue?
A viral infection transmitted by the Aedes mosquito, found in many tropical countries such as Malaysia.
Dengue in Malaysia - Alarming Increase
Dengue deaths in 2013 increased by 151% compared to 2012
Dengue cases in 2013 shot up by 92% compared to 2012
6,155 dengue cases from Jan 1 – Jan 22, 2014, 1,792 dengue cases reported from Jan 1 – Jan 22, 2013;
2012 Cases : 21,444 Deaths : 35
2013 Cases : 41,226 Deaths : 88
Jan 2014 Cases : 6,155 Deaths : 10
6X increase from same time period in 2013
Dengue Fever Spreads?
Aedes mosquito bites someone with dengue fever
Aedes mosquito is infected and continues transmitting virus till it dies
Aedes mosquito bites healthy person and the cycle continues
Dengue Hotspot
Dengue Fever Symptoms
High Fever (reaching up to 40°C) for 10 to 1 week
chills
Backache and rash
Nose or gum bleeding
Low blood pressure and heart rate
Rash May Appear Later
Severe headache
Severe eye pain (behind the eyes)
Joint pain
Muscle and/or bone pain
Nausea and vomiting
One bite is enough to infect a person. Symptoms take 5 – 8 days to appear.



Dengue infographics on the internet

Chapter 2

The Islamic Perspectives of Immunisation

Immunisation from The Perspective of Maqasid Shari'ah

Musa Mohd Nordin, Maszlee Malik

The ethical and moral dimensions of immunisation can be understood from the holistic and all encompassing concept of *Maqasid Shari'ah* or the highest objectives of the *Shari'ah* (Islamic Law). As the true and authentic compass of the entire corpus of Islamic legal prescriptions, the *Maqasid Shari'ah* defines the cardinal purposes of the Muslim's individual, societal, national and global life experiences.

It is these higher objectives of *Shari'ah* that dictate the Muslims' participation in civil society, political governance, health-related programmes and similar activities in their mutual quest for *rahmah* (mercy), *adl* (justice) and *falah* (success)in the worldly life for all mankind.

Al-Ghazali (d 505 AH) pioneered the development of the concept of *Maqasid Shari'ah*. It was a major breakthrough, remapping our religious imperatives and throwing a whole lot of new challenges for legal scholars. There was unfortunately a lull, a void that was later to be addressed by the brilliance of an Andalusian scholar in the 8th century of *Hijrah*. Imam Abu Ishaq al Shatibi al Andalusi (d 790 AH) crystallised the ideas of Ghazali and discussed this in a very lucid and 'scientific' manner in his magnum opus Muwafaqaat fi Usuul al Shariat.

The success of the human project is reflected in the well-being of human society which is nurtured and protected by the comprehensive preservation of the five essentials in human life, namely faith (*deen*) and morality, life (*nafs*), intellect (*'aql*), progeny (*nasl*) and wealth (*mal*)' (see Qur'an, 2:189; 3:130; 3:200; 5:35; 5:100; 24:31; 28:67; 24:51).

Similarly, Al-Qaradawi (1991) views the more inclusive approach to *Maqasid* and further extended the list of the *Maqasid* according to the contemporary reality and discourse to include social welfare and support (*al-takaful*), freedom, human dignity and human fraternity, among the higher objectives

of the *Shari'ah*. These are undoubtedly upheld by both the detailed and the general weight of evidence in the Qur'an and the *Sunnah*.

Apart from him, a few other contemporary scholars also proposed other essentials, which emerged as the result of modernity and the development of human life. Environment and quality of life are amongst the themes included in the proposal as part of the new *Daruriyyat* (essentials) being observed by Shari'ah.

The concept of *Maqasid* can be understood within the spirit of verse 2: 177 in al-Qur'an:

لَّيْسَ الْبِرَّ أَن تُوَلُّوا وُجُوهَكُمْ قِبَلَ الْمَشْرِقِ وَالْمَغْرِبِ وَلَـٰكِنَّ الْبِرَّ مَنْ آمَنَ بِاللَّـهِ وَالْيَوْمِ الْآخِرِ وَالْمَلَائِكَةِ وَالْكِتَابِ وَالنَّبِيِّينَ وَآتَى الْمَالَ عَلَىٰ حُبِّهِ ذَوِي الْقُرْبَىٰ وَالْيَتَامَىٰ وَالْمَسَاكِينَ وَابْنَ السَّبِيلِ وَالسَّائِلِينَ وَفِي الرِّقَابِ وَأَقَامَ الصَّلَاةَ وَآتَى الزَّكَاةَ وَالْمُوفُونَ بِعَهْدِهِمْ إِذَا عَاهَدُوا ۖ وَالصَّابِرِينَ فِي الْبَأْسَاءِ وَالضَّرَّاءِ وَحِينَ الْبَأْسِ ۗ أُولَـٰئِكَ الَّذِينَ صَدَقُوا ۖ وَأُولَـٰئِكَ هُمُ الْمُتَّقُونَ

"It is not righteousness that you turn your faces towards East or West; but it is righteousness to believe in Allah and the Last Day and the Angels and the Book and the Messengers; to spend of your substance out of love for Him, for your kin, for orphans, for the needy, for the wayfarer, for those who ask; and for the ransom of slaves; to be steadfast in prayers and practice regular charity; to fulfill the contracts which you made; and to be firm and patient in pain (or suffering) and adversity and throughout all periods of panic. Such are the people of truth, the God-fearing."

Three of the priorities of the *Maqasid Shari'ah* are directly related to health, while the first (faith and morality) and the fifth (wealth) are indirectly but intimately associated. This implies that in the realm of medicine and healthcare, any health intervention programme must lead towards a healthy and morally upright being, prevent premature and inappropriate deaths, protect from intellectual and physical disabilities, promote safe reproduction and proliferation of the human progeny, which are cost-effective, in short towards 'human wellbeing'.

Allah says in Surah Al-Maidah; 5:32:

وَمَنْ أَحْيَاهَا فَكَأَنَّمَا أَحْيَا النَّاسَ جَمِيعًا ۚ

"And if anyone saved one life,
it would be as if he had saved mankind entirely."

One of the principal objectives of the Shari'ah is the prevention of *Mafsadah*[1] . The plethora of textual evidence highlight the fact that the removal of

harm (*dar´ al-mafasid*) and acquisition of good (*jalb al-masalih*) are "the comprehensive objective of the *Shari'ah"* and the "fundamental universal rule of the *Shari'ah"* (el-Mesawi, 2006: 88-90). The prevention of public harm or evil (*Mafsadah'Ammah*) should be amongst the priorities of Muslims in their life according to the orientation of *Maqasid Shari'ah*.

1. *Adlwalhsan* (justice with fairness and mercy)

Embodied in the *Maqasid Shari'ah* are a few cardinal principles in relation to medicine and healthcare. These include the close interplay of the concepts of:

1. *Adl wal Ihsan* (justice with fairness and mercy)

2. *Islah* (continuous transformation towards the society's well being)

3. *La Darara wala Dirara* (non-malificence and benificence)

4. *Amanah* (individual autonomy) and *Maslahah'ammah* (public interest and benefits)

One of the major themes of Islamic teaching is justice (*'adalah or 'adl*). The perpetual quest for justice is the bedrock of *Maqasid Shari'ah*. Allah commands in Surah An-Nahl; 16:90:

إِنَّ اللَّـهَ يَأْمُرُ بِالْعَدْلِ وَالْإِحْسَانِ وَإِيتَاءِ ذِي الْقُرْبَىٰ وَيَنْهَىٰ عَنِ الْفَحْشَاءِ وَالْمُنكَرِ وَالْبَغْيِ ۚ يَعِظُكُمْ لَعَلَّكُمْ تَذَكَّرُونَ

"Surely, Allah commands doing justice, doing good to others, and giving to near relatives, and He forbids indecency, wickedness, and rebellion. He admonishes you so that you may take heed."

It is stated in the Qur'an:

إِنَّ اللَّـهَ يَأْمُرُكُمْ أَن تُؤَدُّوا الْأَمَانَاتِ إِلَىٰ أَهْلِهَا وَإِذَا حَكَمْتُم بَيْنَ النَّاسِ أَن تَحْكُمُوا بِالْعَدْلِ ۚ إِنَّ اللَّـهَ نِعِمَّا يَعِظُكُم بِهِ ۗ

"Surely, Allah commands you to deliver the amanah (trust) to those to whom they are due; and whenever you judge between people, judge with justice"
Qur'an, 4: 58

According to the Qur'an, justice along with *tawhid* was the most prevailing message and the mission of all the Prophets (57: 25). In addition, justice has also been equated to piety (Qur'an, 5: 8).*'Adl* represents the most vital position of Islam and exemplifies the highest objective of the *Shari'ah* itself (Imarah, 2005: 62-64).

However, *'adl* (justice) alone is not sufficient in delivering the rights of the community. Islam promotes *'adl* along with *ihsan* (benevolence) in ensuring fairness prevails in human life. Such a principle is reflected in the Qur'anic message that orders both *'adl* and *ihsan* to be executed in tandem to enshrine the *tawhidic* ideal of 'justice and fairness' in all aspects of human life (Al-Qur'an 16: 90).

Justice in healthcare is usually defined as a form of fairness. As Aristotle once said, "giving to each that which is his due." The fair distribution and allocation of healthcare in society requires that we look at the role of entitlement. The question of distributive justice also seems to hinge on the fact that some medicines and healthcare services are in short supply, there is not enough to go around, thus some fair means of allocating scarce resources must be determined.

We ought to help even the playing field by providing resources to help overcome the disadvantaged eg children, women, the handicapped and the elderly. As a society, we want to be fair and merciful and provide some decent minimum level of healthcare for all citizens, regardless of ability to pay.

In this context, the WHO's Expanded Program of Immunisation (EPI) is a relatively inexpensive intervention yet a powerful equaliser of the inequities that exist between children the world over.

Diagram 1 illustrates this clearly. Prior to the introduction of the pneumococcal conjugate vaccine (PCV) in the US in 2000, the rates of invasive pneumococcal disease (IPD) among the Navajo Indians was 240 out of 100,000, whilst it was only 70 out of 100,000 amongst Caucasian children.

With the introduction of the PCV, the rates dropped drastically to about 20 out of 100,000, which was similar between the two distinct groups of children. Similar results were illustrated between the disadvantaged Alaskan Eskimos versus Caucasian children in the US, and the indigenous Australian Aborigines when compared with Caucasian Australian children.

In addressing equity in global child health, if all of the basic vaccines in the EPI programme (eg Hib, MMR, DTP, Polio, Hepatitis B) and more of the newer vaccines (eg PCV, Rotavirus) are made available to developing countries, there is an opportunity to save more children's lives and prevent disability. It would contribute towards a 25% reduction of the United Nations' Millennium Development Goal 4 (MDG4), whose endpoint is improving the survival of children and decreasing the under-5 mortality by 2/3.

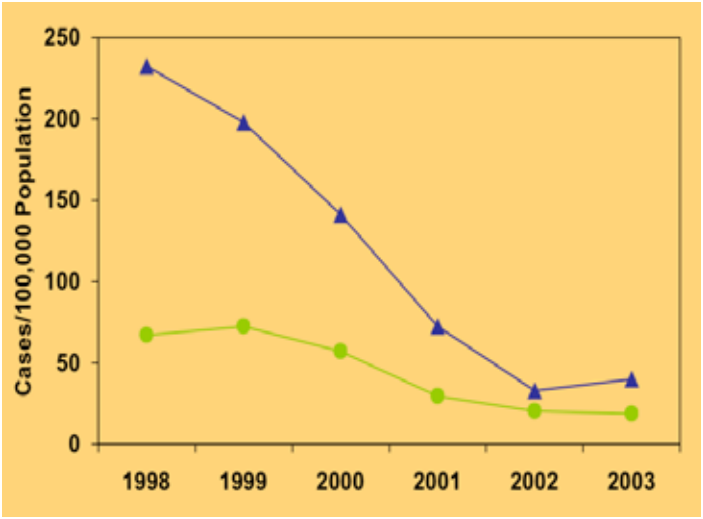


Diagram 1: Rates of invasive pneumococcal disease after the introduction of the pneumococcal conjugate vaccine in Navajo Indians and Caucasian American children

2. *Islah* (continuous transformation towards society's well being)

Meaning piety and good, *Islah* represents the permanent behaviour of transforming towards the direction of betterment and perfection. Similarly, *Islah* also means the transformation from the state of bad to good, from good to better and from better to perfection (Malik, 2011: 237). Therefore, its usage for 'mutual reconciliation' *(Musalaha)* involves mutually agreed consideration towards enhancement and to bring an end to *fasaad* (destruction or mischief) (Ibn al-Manzur, 1955: 2/ 516-17). Hence, Islah could be best defined as *'a state of constant endeavour towards comprehensive excellence (ihsan) within the frameworks of innovation, construction and reconstruction to attain falah according to Maqaasid al-Shari'ah'* (Malik, 2011: 238).

Islah is a landmark theme in the individual Muslim's lives which transforms them into self-actualised people striving to achieve *ihsan* (excellence) in their daily life in their pursuit of *falah*, success in this world and salvation in the hereafter. These righteous concepts thus take centrestage in the domain of medical and healthcare programmes, and consequently determine the consistency of justice, benevolence, religiosity, good governance and the development of the *ummah* (humanity).

The perpetual and unrelenting efforts of man to conquer the ravages of disease have been rewarded with the many successes in global immunisation. Since the advent of the smallpox vaccine in 1796, the world has since witnessed the eradication of this deadly and debilitating disease in 1980.The world is

now virtually free of polio, which is presently endemic in only three countries in the world. The WHO is now up-scaling strategies towards the elimination of both measles (M) and rubella (R) with their successful MR immunisation programme.

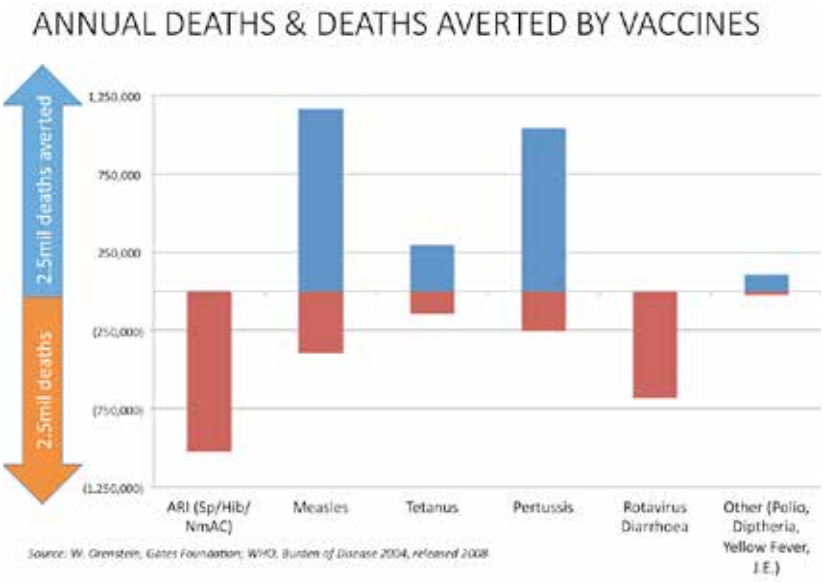


Diagram 2: Annual deaths from Vaccine Preventable diseases and deaths averted by immunisation

This transformation *(islah)* towards the eventual eradication and elimination of vaccine-preventable diseases (VPD) via the global Expanded Program of Immunisation (EPI) is a cardinal principle of the *Maqasid Shari'ah*. Thus, Muslims who oppose immunisation need to reconsider their basic premise and arguments or provide their *hujjah* (evidence) if they still persist otherwise.

Allah says in the Qur'an, Surah Yusuf, 12:108 say:

قُلْ هَـٰذِهِ سَبِيلِي أَدْعُو إِلَى اللَّـهِ ۚ عَلَىٰ بَصِيرَةٍ أَنَا وَمَنِ اتَّبَعَنِي ۖ
وَسُبْحَانَ اللَّـهِ وَمَا أَنَا مِنَ الْمُشْرِكِينَ

"This is my way; I call to Allah, I and those who follow me being certain, and glory be to Allah, and I am not one of the polytheists."

3. Non-Maleficence and Beneficence

The principle of non-maleficence asserts an obligation not to inflict harm intentionally. The obligation to avoid any kind of harmful actions is indicated by many verses of the Qur'an and Hadith. One of the verses read:

...وَلا تُلْقُوا بِأَيْدِيكُمْ إِلَى التَّهْلُكَةِ...

...make not your own hands contribute to (your) destruction...
Al-Baqarah: 195

The harm *(mafsadah)* due to the dynamic interaction of human life presents itself in a variety of forms. It varies in degrees due to different contexts and societies, and can hardly be enumerated, not even through the revelation because for the dynamism of the development of the human mind and its needs. Hence, the prevention of a certain public harm *(mafsadah)* to public health in a certain context requires a diversity of approaches and policies. In dealing with health issues, *maqasid* determines the radius of policies governing society by accumulating general benefits and avoiding harm to the whole community to enhance public interest *(maslahah'ammah)* (al-Qaradawi, 2000: 2/ 986).

The Hippocratic oath asserts "first do no harm". We act in ways that do not cause needless harm to others, that is we take 'due care'.

The principle of beneficence potentially demands more than the principle of non-maleficence, because as healthcare providers (HCP), we must take positive actions to help others, not merely refrain from harmful acts. More specifically, HCP should undertake all efforts to prevent harm, remove harm and do or promote good.

Immunisation satisfies all the pre-requisites of the principle of beneficence because it benefits the general health and welfare of children. The global burden of under-5 deaths was 8.8 million in 2008 (Diagram 3). Muslim countries contibuted 40% of the under-5 deaths in the world (Diagram 4). Approximately 2.5 million deaths are prevented and 750,000 children are saved from disabilities every year by global immunisation programmes. Apart from preventing and removing the sources of harm which are vaccine-preventable diseases, immunisation has been shown to improve the IQ and other cognitive fuctions namely language and mathematic scores.

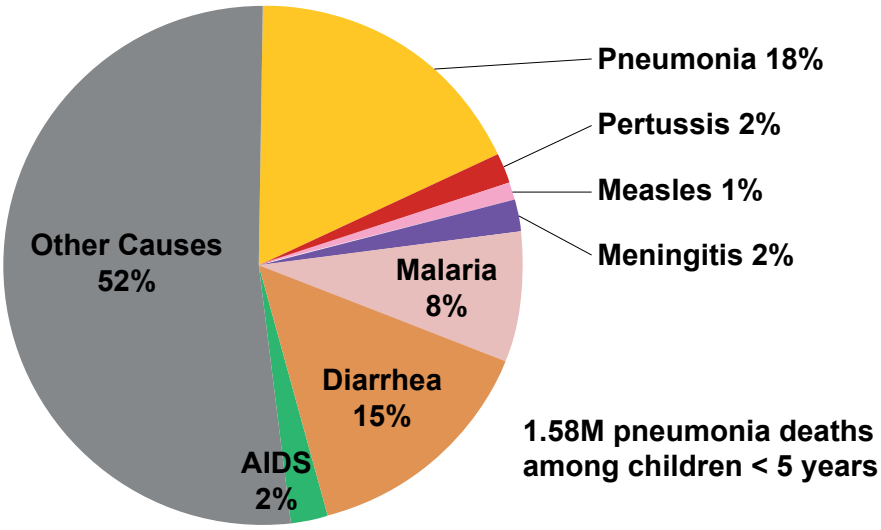
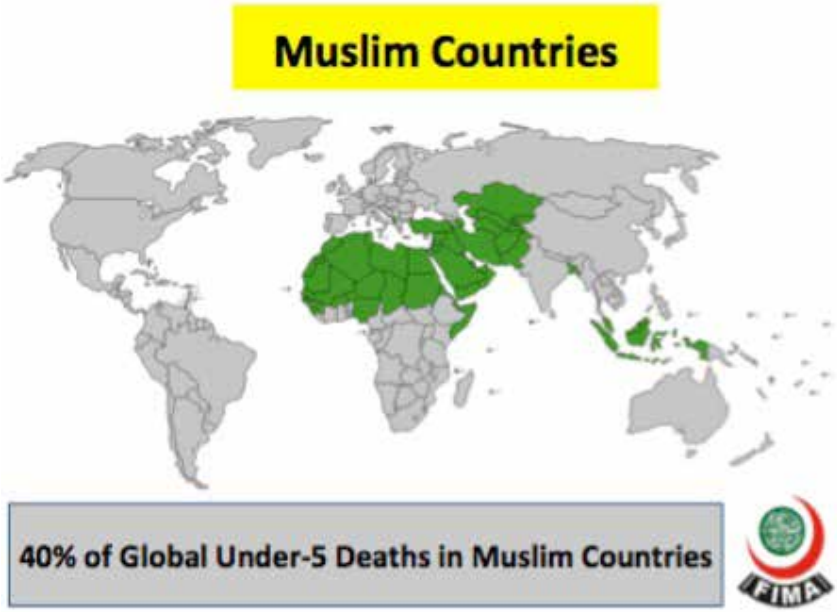


Diagram 3: Causes of global Under-5 deaths in 2008



Due to the herd immunity conferred by immunisation, society similarly benefits. Less children and adults become ill with VPD, with less disease outbreaks, decreased hospitalisations, less need for expensive treatments, less permanent disabilities, less absence from work and less loss of productivity.

This also translates into economic benefits for the nation (Diagram 5). In developing nations, a 10-year gain in life expectancy translates into an additional 1% increase of annual growth of income per capita. In developed nations, for each birth cohort vaccinated, the US saves $43 billion in direct medical costs and indirect costs.

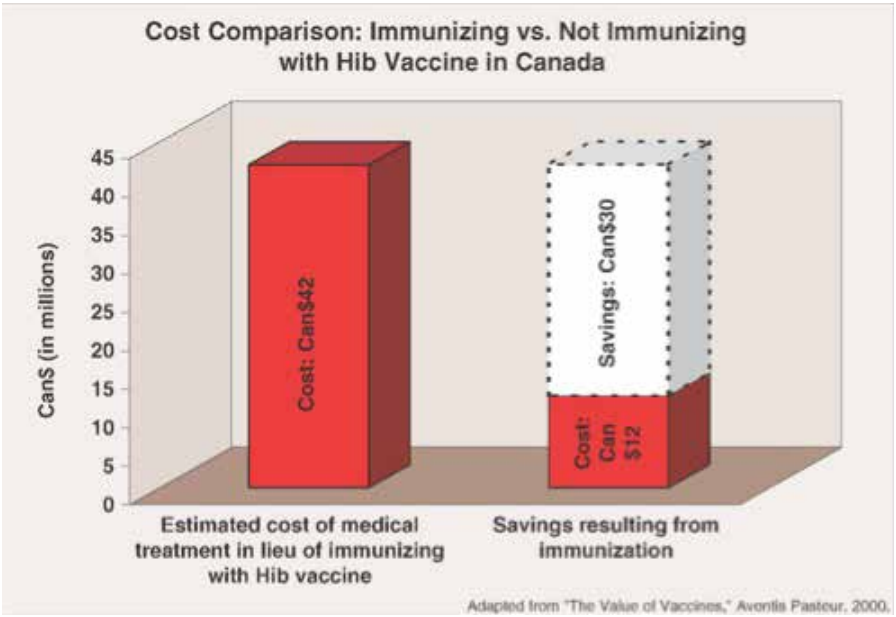


Diagram 5: Investing in immunisation saves more money than it costs

Vaccine-preventable diseases are still responsible for 2.5 million infant deaths each year. If currently available vaccines are better and more comprehensively distributed and utilised, there is potential to save more lives, prevent more disabilities, accrue more societal and economic benefits and enhance national and global security (Diagram 6). Unfortunately, many children in the developing world are still not immunised (Diagram 7).

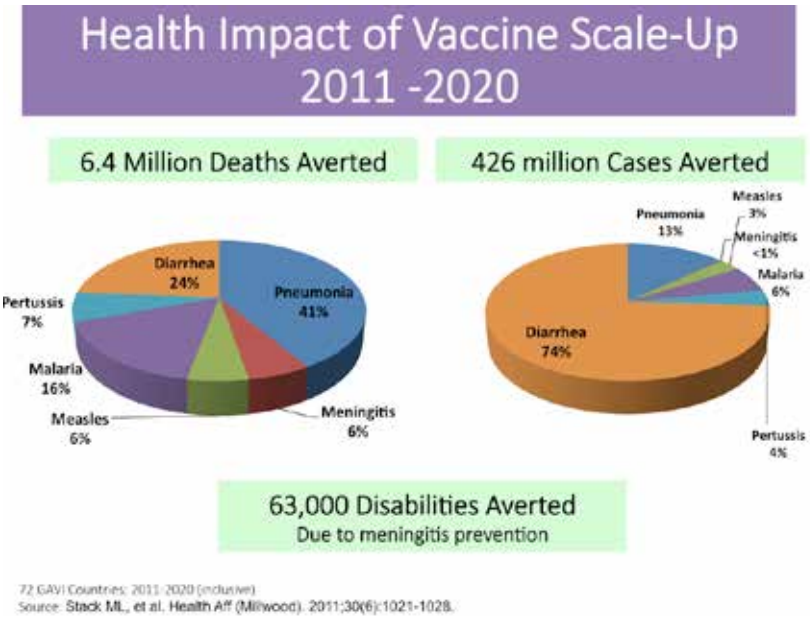


Diagram 6: Vaccine-Preventable disease cases, disabilities and deaths averted in GAVI countries extrapolated from 2011 – 2020 with universal immunisation

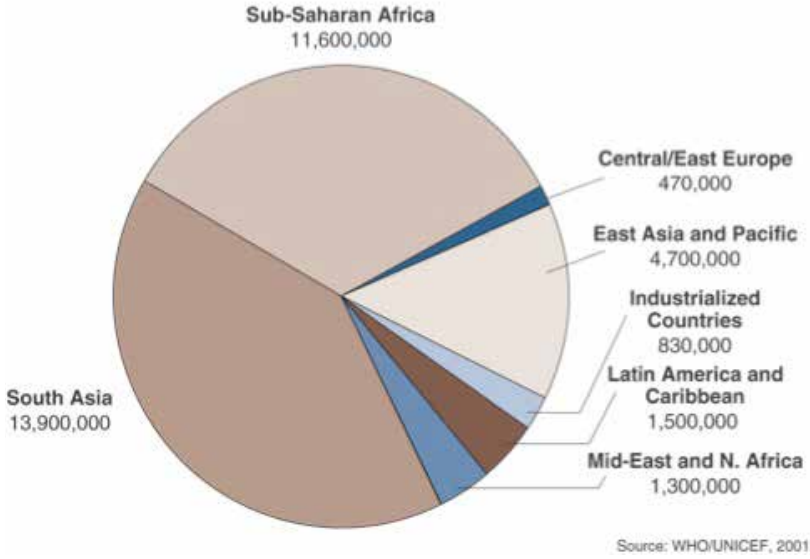


Diagram 7: 34 million children are still not fully immunised

Any medical intervention is bound to be associated with some degree of risk. The potential adverse effects of immunisation must be carefully weighed against the numerous individual, societal and economic benefits accrued from the WHO Expanded Program of Immunisation (EPI). It is not logical to avoid any form of medical intervention solely because one elects to avoid risks. This paradigm of thought which is propagated by anti-vaccine groups is incoherent and irrational because even doing nothing is associated with risks, namely the increased risk of acquiring vaccine-preventable diseases which can lead to outbreaks of epidemics and pandemics of diseases, increased and prolonged hospitalisations, increased utilisation of expensive treatment, increased deaths and increased physical and intellectual disabilities.

It is like suggesting to us not to eat breakfast because 250 choke on their breakfast and die each year or not to take our daily baths because 350 drown and die in the bath tub each year, which is quite obviously absurd! The benefit risk ratio favours these daily acts of living and that is why we continue to eat breakfast and bathe ourselves.

This is also based on a principle of jurisprudence *(usulfiqh)* which relates to the discussion on the issue of evaluating the benefit *(maslahah)* in making decisions:

"All other things being equal, prevention of a harm (dar al-mafsadah) has priority over the pursuit of a benefit (jalb al-maslahah). If the benefit (maslahah) has far more importance and worth than the harm (masfsadah), then the pursuit of the benefit has priority."

Similarly the risk-benefit risk ratio unequivocally favours immunisation. Our children and society enjoy monumental benefits *(maslahah pl. masalih)* compared to the small risks associated with vaccinations. The most common side effects of immunisations which may be considered as *'mafsadah'* are mild and transient only. On the other hand, vaccine-preventable diseases can be serious, or even deadly. The common side effects associated with vaccines are pain, redness and swelling at the injection site which often go away quickly. Serious side effects following vaccination, such as severe allergic reaction, are very rare.

4. *Amanah* (Individual Autonomy) and *Maslahah'ammah* (public interest and benefits)

Islam asserts the position of human beings as God's vicegerent. According to this understanding, God had exclusively rendered his trust to humankind to administer this world well and make it a peaceful and safe place to live. As 'trustee', every single individual is rendered with the trust *(amanah)* within his own autonomy. Everything in the universe belongs to God and everything was created for the service of man, who may use anything in the world for a positive purpose, but he is not supposed to abuse anything. The quality of believers in delivering *amanah* has been mentioned in many places in al-Qur'an: (4:58); (2:283); (33:72); (9:27); (23:8).

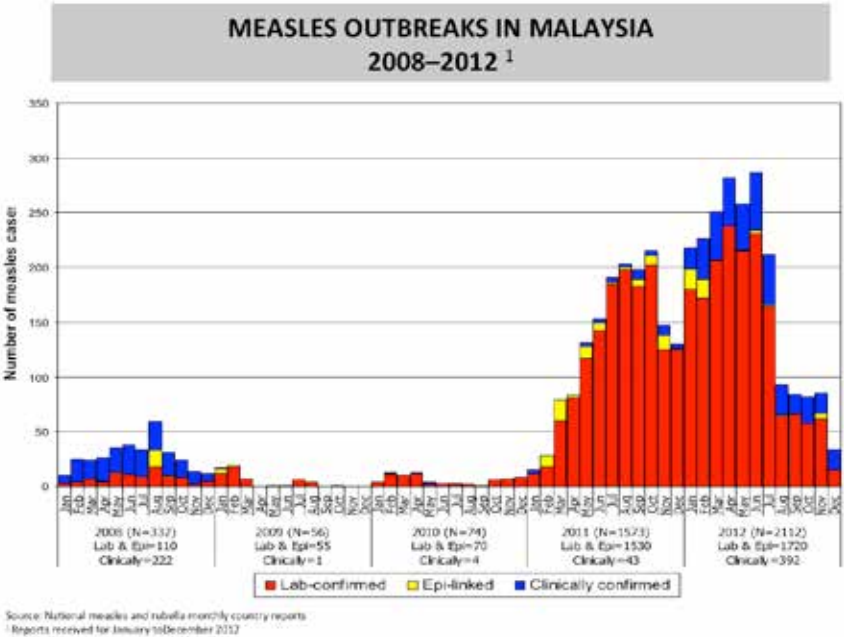
The healthcare professional may have the greater knowledge of vaccine-preventable diseases, of possibilities, risks, treatment, outcomes and the options of prevention with immunisations. Nonetheless, the principle of autonomy *(amanah)* as in *usulfiqh* respects and values the individual (or the parents or legal guardians) as the one who makes the self-defining choices upon which he then acts and for which he is accountable for. One is responsible for himself and those under his custody, and will be questioned before Allah the Almighty during the judgement day based on this *'amanah'* paradigm.

The principle of individual autonomy *(amanah)* however needs to be considered within the context of the wider public interest and benefits. Thus, the principal Islamic legal maxim *(al-Qawa'id al-Fiqhiyyah)* which stipulates; *"individual rights may have to be sacrificed in order to protect public interest."* It is in this vein that medical interventions, such as global immunisation programmes that have been proven to protect the general health and well being of the public, have priority over the considerations of individual interest.

Another important moral consideration is to ensure that the individual choices one makes does not harm others. Those who do not immunise

against VPD are at increased risk of being infected. They, therefore, might pass on the infection to others, who may then be harmed!

The vast majority of those infected with measles in Disneyland in 2015 were unvaccinated against the disease. It has since infected other children in 19 states in the US and has moved further north to Canada. The UN MDG4 targets the measles coverage rate at 90% with a measles case incidence of the less than 5 cases per million. Due to the decreased uptake of the MMR vaccine in Malaysia, there was an outbreak of measles which occurred mainly amongst those not vaccinated (Diagram 8). The incidence of measles in Malaysia has rises from 6.6 per million in 2013 to 7.8 per million in 2014 and is currently 26.3 per million in 2015.



Source: National measles and rubella monthly country reports
1 Reports received for January to December 2012

The omission to vaccinate has obviously impacted negatively on the well being of the public, which is enough argument for policy makers to impose an obligation to act. The recent Australian “no jab, no pay” policy, plans to withdraw childcare and welfare benefits from Australian parents who refuse to vaccinate their kids. Thus, parents who decide against immunisations could be up to $15,000 worse off per child. California lawless passed a bill in early July 2015 mandating all aflame to receive immunisations except for those with a valid medical reason. The legalisation would end exemptions based on persuade or religious reasons, which parents who suppose vaccinations routinely request.

If sufficient numbers of people in a community are immunised, usually in excess of 80%, the protection against VPD is conferred to virtually all persons in the community. This is known as 'herd immunity'. This community immunity offers protection to vulnerable segments of the community who cannot be immunised due to various reasons eg too young, have cancers, have HIV/AIDS, are on chemotherapy or radiotherapy. The common good of the community is served which extends beyond the individual. In addition, the community benefits from the economic savings and improved security as a result of the immunisation programmes.

Conclusion

The *maqasidic* method in looking into issues concerning health represents a comprehensive, holistic and universal approach towards *Shari'ah*. Any studies conducted on the relation between Islam and human sustainability, the *Shari'ah* or the epistemological sources of Islam must never abandon the discussion on *maqasid*. The *maqasid* is but a crucial tool in understanding the revelation or the texts of the sources, in which the negation of it will lead to the misinterpretation of the texts, hence Islam as a whole (Awdah, 2006). Above all, the whole idea of *maqasid* implies a comprehensive implementation of justice in the community through the preservation and promotion of human well-being.

The global Expanded Programme of Immunisation has been shown and proven to be a very safe, effective and cost savings global child survival strategy. With the exception of clean drinking water, immunisation is the most powerful public health intervention programme.

We should therefore not gullible nor easily persuaded by various irresponsible groups spread rumours in various media that immunisation is harmful and not effective.

The overriding objective of the *maqasid shari'ah* is the quest for justice with fairness and mercy, thus it follows that there is an unequivocal maqasidic and moral case in favour of immunisation.

Justice requires that every child should have ready access to routine vaccination against serious childhood diseases and which should be a global priority for all governments and international health agencies.

Syariah Guide to Seeking Medical Treatment

H Agus Setiawan

It is mentioned in the Quran, with regards to honey:

يَخْرُجُ مِن بُطُونِهَا شَرَابٌ مُّخْتَلِفٌ أَلْوَانُهُ فِيهِ شِفَاءٌ لِّلنَّاسِ ۗ إِنَّ فِي ذَٰلِكَ لَآيَةً لِّقَوْمٍ يَتَفَكَّرُونَ

"There emerges from their bellies a drink, varying in colours, in which there is healing for people."
An-Nahl: 69

Imam Qurtubi has elaborated on the meaning of this particular verse, *"Allah (swt) uses the term 'in which there is healing for people' which is proof and guidance on the necessity of taking medicine or other substances for healing purposes."* (Tafsir al-Qurtubi, volume 1, page 138).

There are also many narrations from the collections of hadith where the Prophet Muhammad (pbuh) allowed and sometimes instructed his companions to seek treatment. In a hadith narrated by Imam Muslim from a prophet's companion, Jabir bin Abdullah (ra), the Prophet (pbuh) said, *"Every illness has a cure, and when the proper cure is applied to the disease, it ends it, Allah willing."* (Sahih Muslim, volume 14, page 191).

A companion of the Prophet (pbuh), Usamah bin Syariik (ra) said, "I was with the Prophet when the Bedouins came to him and said, *'O Messenger of Allah, should we seek medicine?' He said, 'Yes, O slaves of Allah, seek medicine, for Allah has not created a disease except that He has also created its cure, except for one illness.' They said, 'And what is that?' He said, 'Old age'.* (Narrated by Abu Daud, see 'Aun al-Ma'buud' volume 10, page 334)

From these hadiths, Imam Nawawi opined that seeking medical treatment and healing is *mustahabb* (recommended). The same conclusions were derived from the *ulama'* (scholars) of the *Syafii' mazhab* or school of Islamic jurisprudences (See Sahih Muslim). Imam Abu Ishaq asy-Syaerozy, the author of the book al-Muhadzab, said, *"If a Muslim falls ill, it is compulsory for*

him to be patient and if he so wishes, to seek medical treatment/healing". (al-Muhadzab volume 5, page 94). Hence, in seeking medical treatment/healing, the initial *hukum* (authoritative law in the shari'ah) is *halal* (permissible), but can become *wajib* (compulsory) under certain circumstances.

One example is when the omission of medical treatment or healing in someone who is suffering from an illness will endanger him or cause his death. In the context of *muamalah* (commercial or civil issues) and the problems related to worldly living, the *hukum* is derived from the basis of a strong assumption of the outcome, and not necessarily from a confirmed outcome. When a particular medicine has been well researched and scientifically proven to cure a particular illness, and non-treatment may lead to definite mortality (death) or morbidity (sickness), the benefit of treatment is clear, scholars of law would rule that refusal of treatment is *haram* (forbidden). This is rationalised as the preservation of life as stipulated in the *Maqasid Shari'ah* based on the quranic injunction 'saving of one life is as though the entire human race is saved'.

Haram (forbidden) substances in medical treatments

From the views of many *ulama'* on the *hukum* of using forbidden substances in medical treatments, the widely accepted view permits usage with certain cautions or pre-conditions. This view is held by *ulama* from various schools of Islamic jurisprudence *(mazhab)*, namely mazhab Hanafi (Imam al-'Ainiy and others) and mazhab Zohiri (such as Imam ibnu Hazm and others). The cautions or pre-conditions are:

1. There are no alternative medicine made from permissible *(halal)* substances.

2. The usage is recommended by a trustworthy and competent doctor, who is of the opinion that its use is mandatory and there are no alternative medications.

There are examples during the time of the Prophet (pbuh):

It was narrated by Imam Nasai in his book "Sunan", where Arfajah bin As'ad sustained injury on his nose at *yawm al-kilab* in pre-Islamic times. It resulted in him reconstructing his injured nose in silver. The Prophet (pbuh) saw and ordered him to use gold instead. (Sunan Nasai, volume, 8 page 142)

A companion of the Prophet, Anas bin Malik (ra), said that Rasulullah (pbuh) even gave some leeway to Abdurrahman bin Auf and Zubair bin Awwam to use silk shirts because of their skin itchiness. (Sunan Nasai, volume 8. page 178)

The use of gold and silk, which by default is forbidden for use by men, is allowed for use in healing and medical treatments. This allowance is not specific to the three aforementioned companions, but is applicable as a general concept for Muslims in the state of *dharurah* (emergency).

In fact, the book *"al-Fatawa al-Hindiyah"* (Encyclopedia of Fatwas in India) stated: "It is permissible to use as medical treatment the drinking of blood, urine or eating carcasses, if it is recommended by a Muslim doctor, and that there are no other medications from substances that is permissible. If the use of forbidden substances is for the hastening of cure, then there are two views amongst the School of Hanafi scholars: one view is permissible and the other is forbidden".-(al-Fatawa al-Hindiyah , volume 5, page 128)

Mixture of permissible and forbidden substances

Some modern medicine contains alcohol or other forbidden substances in the form of solid or liquid. In this case, what is the *hukum* of its use in the state of *dharurat* (emergency)?

1. **When there is no alternative**
   If there is no alternative apart from that mixed-substance medicine, then it is permissible. If a completely forbidden substance is allowed for use in healing under certain condition, all the more so for a medicine which contains only partly forbidden substances.

2. **When there is an alternative**
   If there is an alternative medication which is pure from forbidden substances, but that medication is hard to procure, or the price is outrageously high, or the need for such medication is necessary but not to the level of *dharurat*, then the rule is: *When a forbidden substance has been mixed and has lost its physical quality in terms of its matter, taste or smell (istihalah), then that medication is permissible for use. The reason being that the physical quality of the forbidden substance has become non-existent.*

Imam al-Kaasaniy explained the use of forbidden substances which has undergone *istihalah* (bio-transformation). *Istihalah* is the concept of a forbidden substance which has undergone physical or chemical changes to become a different substance altogether. For example, if the hide of a carcass is washed and the *samak* (cleansing) done accordingly, then the hide becomes clean and purified. Or if alcohol is subjected to the distillation process to become vinegar-like, it becomes permissible. He said, " *When a forbidden substance has undergone physical changes in its matter, taste and smell, then that substance is considered to have been purified. A substance is labelled as 'forbidden' because of what it contained. So when its content is*

purified in any way, then the substance's characteristics have also changed." (al-Badai' by Imam al-Kaasaniy, volume 1, page 85).

Imam Ibnu Hazm said: "When a forbidden substance undergoes *istihalah* or transformation, then it shall no longer be called a forbidden substance but a new substance which is halal and pure". (*al-Muhalla* by Imam Ibnu Hazm, volume 2, page 112).

Imam Ibnu Taimiyah explained: *"Khabaits that are forbidden by Allah like carcasses, blood, swine and other species that fall into the water or stream and later die with its body decomposed in the water, then the reason of it being labelled as 'forbidden' has also ceased. The same concept can be applied to alcohol use. When the core substance of alcohol in a solution ceased to exist for whatever reason, then those who drink that solution must not be called an alcoholic drinker."* (Fatwa Ibnu Taimiyah, volume 1, pg 20).

Imam Nawawi explained in his book, *al-Majmu'* about a dish with dissolved human flesh: *"That dish is not haram (forbidden), because the flesh has dissolved. It is the same as urine or any forbidden substances which has dissolved into water, the volume of which is more than 2 'qullah'. It is permissible to drink that water, as long as the property of the water does not change. This is on the basis that the water does not possess the property of the dissolved urine. Urine, in that stage, is considered non-existent."* (Al-Majmu' Syarah Muhadzab by Imam Nawawi, volume 9, page 62).

Imam Ibnul Qayyim said: *"Allah has extracted the pure from the soiled, and the soiled from the pure. The standard ruling does not lie on the physical matter alone but the substance of that matter [in that particular time]. And it is not permissible to rule a substance as najis (soiled or forbidden) if it has lost the property which makes it najis and 'turned' into a different matter under a different name."* (I'lamul muwaqqin 'an rabbil 'alamin, volume 1, page 298.)

From the various evidence, it can be concluded that when a matter, which is considered najis or *khabaits* and all other forbidden substances, is mixed with medicine which is *halal*, or when it is boiled or processed or hydrolysed and the bio-transformation has made it distinct and different in form, taste or smell, then the medicine is categorised as *mubah* (allowed) and can be used for treatment purposes.

If a forbidden substance has not totally changed its form, or that there is still a significant amount of the substance in its original form due to its quantity or insoluble state, this is considered in the same manner as evaluating the use of a forbidden substances for healing: that it is permissible for use as long as the use of the medicine is necessary, that there is no other alternative medicine permissible for use, and recommended by trustworthy medical professionals.

Rulings surrounding immunisation

Now that we understand the basics on the *shari'ah* rulings of seeking medical treatment, it is somewhat easier to put into context the status of the rulings surrounding immunisation.

Immunisation is often understood as defense or protection against illness. In the context of healthcare, immunisation is seen as the administration of vaccines to prevent the occurrence of a targeted disease. It is usually given in the form of injections or orally to infants, children and adults. They have been demonstrated to be effective in global public health programmes, diminishing, eliminating and eradicating dangerous diseases. Close and vigilant monitoring of safety issues from formulation, research studies, clinical trials and post-licensure monitoring have shown vaccines to be safe, while adverse effects following immunisation (AEFI) are few and far between. AEFIs are also mild and transient usually.

The medical, social and economical benefits conferred by immunisation programmes are impactful and unprecedented compared to other public health programmes. Except for a few conservative Muslim scholars, virtually all distinguished Muslim scholars, national fatwa councils and international *majma' fiqh* (fatwa councils) endorse global immunisation programmes and urge all believers to prevent the spread of infectious diseases and protect themselves from the scourge of vaccine-preventable diseases.

The custodians of the two holy cities, Mecca and Madinah, have even made it mandatory for all pilgrims to immunise against invasive meningococcal disease and other diseases, namely polio, yellow fever (if coming from endemic countries) prior to performing the *hajj or umrah*.

The European Council of Fatwa & Research (ECFR), chaired by Syaikh Dr Yusuf Qaradawi and includes more than 100 Muslim scholars from all over the world, has reviewed many medical issues including immunisation from the perspective of *shari'ah*. When permitting the use of the oral polio vaccine (OPV), the ECFR issued a most powerful call and reminder to all Muslim scholars and leaders:

"The Council urges Muslim leaders and officials at Islamic Centers not to be too strict in such matters that are open to considered opinion and that bring considerable benefit to Muslim children, as long as these matters involve no conflict with any definite text."

Islamic Views on Immunisation

Piprim Basarah Yanuarso

The anti-vaccine movement is nothing new. It began in the 1700s when the first smallpox vaccine was discovered. The arguments then are similar to the ones rolled out today in the social media, such as:

- Smallpox isn't that bad
- Vaccines won't provide life-long immunity
- Vaccines will give you syphilis
- It's the natural selection of the species, where only the fittest survive, to control population explosion and safeguard the world's resources
- It is against our religion

The religious element is now being aggressively propagated by the anti-vaccine lobby. They are all over the social media and there is a plethora of ground activities such as public forums and *ta'lim* (talks) in mosques. The public is easily intrigued by this issue because of sensitivity towards the *halal* (permissible) and *haram* (not permissible) of vaccination.

Anti-vaccine groups are also actively bombarding society with the notion of poisonous chemicals in vaccines. They have been using prophetic medicine *(tibbun-nabawy)* as their argument to manipulate people to shun vaccinations and other medicines. Instead, they persuade people to go back to nature.

The false dichotomy between herbal and modern medicines cannot be more stark; *tibbun-nabawy* versus vaccination; one is attributed to originate from Allah and the other is from the fallible human being, one is right and the other is totally wrong. Their accusation is towards pharmaceutical companies who are solely profit-driven, who use doctors and healthcare professionals as their profit-making agents. In addition, they have also been propagating the conspiracy theory that vaccination is the Zionist weapon to weaken the Muslims. As a result, the public has been deliberately fed the wrong information about vaccination and consequently misled.

Islamic view on knowledge

The Quran has gracefully invited Muslims to explore the universe and Allah has stated the criteria of ululalbab (people of knowledge) in Surah al-Imran:

إِنَّ فِي خَلْقِ السَّمَاوَاتِ وَالْأَرْضِ وَاخْتِلَافِ اللَّيْلِ وَالنَّهَارِ لَآيَاتٍ لِّأُولِي الْأَلْبَابِ (١٩٠) الَّذِينَ يَذْكُرُونَ اللَّـهَ قِيَامًا وَقُعُودًا وَعَلَىٰ جُنُوبِهِمْ وَيَتَفَكَّرُونَ فِي خَلْقِ السَّمَاوَاتِ وَالْأَرْضِ رَبَّنَا مَا خَلَقْتَ هَـٰذَا بَاطِلًا سُبْحَانَكَ فَقِنَا عَذَابَ النَّارِ

"Indeed, in the creation of the heavens and the earth and the alternation of the night and the day are signs for those of understanding (190). Who remember Allah while standing or sitting or [lying] on their sides and give thought to the creation of the heavens and the earth, [saying], "Our Lord, You did not create this aimlessly; exalted are You [above such a thing]; then protect us from the punishment of the Fire."

Surah al-Imran: 190-191

In these verses, the *ululalbab* are those who are able to harmonise the *zikir* (thinking of Allah) and deep thinking about the universe. The deep thinking of Allah's creation in the earth and heavens will make one's *iman* (belief) stronger; hence make him more earnest in his *zikir*. Therefore, Islam encourages believers to explore the universe, especially when it can benefit mankind and make them closer to the Creator.

There are two sources of knowledge:

- *Ilm of Qauliyah:* Formal or direct channel through the Prophet (pbuh) and His messengers in the form of verses and prophetic guidance. Represents the absolute truth or knowledge as a general concept which acts as the basis for human's way of life.
- *Ilm of Kauniyah:* Non-formal channel in the form of human intuition and inspiration (regardless of their religions and beliefs), to those who use their senses given by Allah to explore the universe. Represents the relative truth or knowledge within a specific context, which serves to complement the meaning of human life.

These two *ilm* (knowledge) are inter-connected and closely complement each other. Failure to understand this concept may lead a Muslim to become extreme in his views and fall victim to the dichotomy between Islamic knowledge versus non-Islamic knowledge, or Allah's knowledge versus man's knowledge.

Vaccination as one of the biggest *ilm of Kauniyah* in this century

Immunisation was further developed in the 18th century by Muslim physicians who lived in Turkey, who used the pus from cows with cowpox to prevent themselves and others from acquiring smallpox, variola and other related diseases. This tradition was later brought to England by Lady Montague, wife of an English ambassador to Turkey, and was further researched by Edward Jenner with the eventual development of the first smallpox vaccine.

The process from the founding of the first vaccine and the evolution of scientific knowledge on immunisation is a long and arduous journey. It takes years, even decades, to produce one single vaccine - from laboratory testing to trials on animals, clinical trials on adult human volunteers and finally on children - to be proven safe and efficacious. Vaccines with proven severe side effects would be immediately withdrawn. The global eradication of smallpox in 1979, one of the biggest achievements in vaccination history, is evidence of *ilm of kauniyah.*

This phenomenal benefit from vaccination, a result of more than two centuries of honest scientific research and discovery, is strangely unacceptable to anti-vaccine groups simply because vaccines and the knowledge around it are man-made. This is an example of separation or secularism in the understanding of Islam. Both sources of knowledge, *ilm kauniyah* and *qauliyah*, are all blessings from Allah.

Islamic view on the prevention of disease

Islam emphasises the concept of prevention in human life. For example, in order to prevent social promiscuity, destruction of the family structure and the ensuing transmission of sexually transmitted disease (STD), Islam has strictly forbidden the act of adultery and fornication. Allah mentioned in the Quran:

وَلَا تَقْرَبُوا الزِّنَىٰٓ إِنَّهُ كَانَ فَاحِشَةً وَسَاءَ سَبِيلًا

"And do not come near adultery. Indeed, it is ever an immorality and is evil as a way."
Al-Israa': 32

In this verse, the prohibition is not only directed to the act of sexual intercourse but anything that may consequently lead to the act itself, which is *zina*. It is easier to prevent one from committing the acts leading to adultery than to prevent the act of *zina* or sexual intercourse. This is a stark contrast from liberal 'safe sex' programmes promoting condoms, which indirectly facilitates the sexual act.

In the hadith, Prophet Muhammad (pbuh) said:

"Take advantage of five matters before five other matters: your youth, before you become old; your health, before you fall sick; your richness, before you become poor; your free time before you become busy; and your life, before your death."
Al-Hakim

"If you hear of an outbreak of plague in a land, do not enter it; but if the plague breaks out in a place while you are in it, do not leave that place."
Al-Bukhari and Muslim

Abu Huraira reported Allah's Messenger as saying:

"A strong believer is better and is more lovable to Allah than a weak believer, and there is good in everyone."
Sahih Muslim

Clear evidence from the hadiths and Quran shows that Islam puts a very high premium on disease prevention as a pivotal healthcare intervention and strategy. Cost-benefit studies also reinforce the fact that the cost of prevention is remarkably lower compared to the total cost of treatment itself.

When the Prophet Muhammad (pbuh) was asked about the hybridisation of palms and dates, He replied; *"You know better about the affairs of your world"* (Nawawi)

This has empowered Muslim scholars and physicians in the past to achieve remarkable advancement in medicine and science, often described as the golden era of Islamic civilisation in science and medicine.

Muslim scholars' view on vaccination

The Expanded Program on Immunisation (EPI) has been implemented in many countries worldwide including Muslim countries. Till today, no reputable scholars have spoken out against the use of vaccines. The late Syaikh Abdul Aziz bins Baz, a scholar from Saudi Arabia and Syaikh Dr Yusuf al-Qaradawi from Qatar have both issued *fatwa* (religious edicts) supporting vaccination programmes, stating that the science of immunisation should be referred to trusted experts.

Many other international Muslim scholars have similarly acknowledged the benefits of immunisation. The claim from anti-vaccine groups that vaccines are prohibited because vaccination introduces germs into the human body

that are potentially harmful is misleading and false. This understanding is merely based on *zhan* (assumption) and Islam has clearly prohibited the act of assumption as mentioned in the Quran:

يَا أَيُّهَا الَّذِينَ آمَنُوا اجْتَنِبُوا كَثِيرًا مِنَ الظَّنِّ إِنَّ بَعْضَ الظَّنِّ إِثْمٌ

O you who have believed, avoid much [negative] assumption. Indeed, some assumption is sin

Al-Hujurat: 12

With easy access to information via the internet, the public are easily influenced by anti-vaccine propaganda on social media. Virtually all of these individuals and groups are not trained as experts in the science of immunology or infectious diseases, but claim to be so by just googling the subject on the internet. This is clearly against Islamic teaching that prohibits spreading rumours and half-truths and which advocates certainty over assumption.

Besides this, the Prophet (pbuh) urged believers to seek authentic knowledge and only seek healing from those who are experts in the field of medicine when He said; *"Seek medical treatment, for truly Allah does not send down a disease without sending down a cure for it. Those who have knowledge of the cure know it, and those who are ignorant of it do not."* [Musnad Ahmad]

Issue on porcine enzymes in vaccine production

One of the issues raised by anti-vaccine groups is regarding the use of trypsin, a porcine enzyme, in the production of certain vaccines. Many thought that all the ingredients were mixed together randomly. If this was the process, then the vaccines could be considered as not permissible *(haram)*. However, this cannot be further from the truth. Vaccine production, in the modern scientific world, is much more complex.

In the manufacturing process of the Oral Polio Vaccine (OPV) and Rotavirus vaccines, the trypsin acts to dissociate the virus from the cultured cells. Through a process of micro-filtration and ultra-filtration, trypsin and other medium components are removed. The purification process takes place until the final vaccine that is produced does not contain any traces of trypsin. Understanding this complex process of vaccine production unequivocally debunks allegations that some vaccines contain *haram* ingredients from porcine origin.

Conclusion

Immunisation is a powerful public health programme which contributes to the prevention of vaccine-preventable diseases, saves lives, prevents disability and improves the general health of children. It is founded on the paradigm of prevention which is strongly advocated by the Quran and the *hadiths*. Muslim scholars and International Islamic Fatwa Councils have unanimously supported global immunisation programmes to protect the current and future health of our children.

Tawakal and The Prevention of Disease

Raehanul Bahraen, Mohammed Fauzi Abdul Rani

Tawakal or tawakkul is a very important concept in Islam. It is considered a fundamental conviction in the life of a Muslim. There are many verses from the Quran and Hadith explaining the importance of *tawakal* to Muslims.

وَمَن يَتَّقِ اللَّـهَ يَجْعَل لَّهُ مَخْرَجًا (٢) وَيَرْزُقْهُ مِنْ حَيْثُ لَا يَحْتَسِبُ ۚ وَمَن يَتَوَكَّلْ عَلَى اللَّـهِ فَهُوَ حَسْبُهُ ۚ إِنَّ اللَّـهَ بَالِغُ أَمْرِهِ ۚ قَدْ جَعَلَ اللَّـهُ لِكُلِّ شَيْءٍ قَدْرًا

"And for those who fear Allah, He (ever) prepares a way out. And He provides for him from (sources) he never could imagine. And if any one puts his trust in Allah, sufficient is (Allah) for him. For Allah will surely accomplish his purpose: verily, for all things has Allah appointed a due proportion."
At-thalaq: 2-3"

إِنَّ اللَّهَ يُحِبُّ الْمُتَوَكِّلِينَ

"Indeed, Allah loves those who rely [upon Him]"
Al-Imran : 159

وَعَلَى اللَّهِ فَتَوَكَّلُوا إِنْ كُنْتُمْ مُؤْمِنِينَ

"And put your trust in Allah if you are believers indeed."
Al-Maidah : 23

From Umar ibn Al-Khattab, the Prophet Muhammad (pbuh) had said:

"If only you relied on Allah a true reliance, He would provide sustenance for you just as He does for the birds: They fly out in the morning empty and return in the afternoon with full stomach."
Ahmad, An-Nasaa'ee, Ibn Maajah, Al-Hakim and At-Tirmizi no 24 Hasan Sahih

What is *Tawakal?*

According to Syaikh Abdul Aziz bin Baz Rahimahullah, *tawakal* has two aspects:

1. The absolute reliance unto Allah in the pursuit of acquiring that which benefits and avoiding that which harms in this life and the hereafter, and leaving these issues to Allah with the true belief that no one gives, withholds, harms or benefits except Allah Most High.

2. Acting and striving to achieve the objectives.
   One of the *salaf* said: *"Whoever criticises action and work for the sake of earning has criticised the sunnah and whoever criticises reliance on Allah has criticised belief. Reliance on Allah was the custom of the Prophet, while working and earning was his sunnah. So whoever aspires to reach his custom, let him not neglect his sunnah."*

The birds as alluded to in the earlier hadith have shown us the true understanding of *tawakkul*. They fly out in the morning purely in pursuit of their sustenance. While doing so, they fully understand that they rely on Allah while setting out to find their sustenance, in their quest they would interact and react, and they firmly believe that what Allah has set forth when they return is all good and it is all in the hands of Allah. If, however, they relied on their own strengths and abilities and engaged in deception, lying and insincerity, it is opposite to reliance on Allah.

Another example from the hadith:

عَنْ أَنَسِ بْنَ مَالِكٍ يَقُولُ قَالَ رَجُلٌ يَا رَسُولَ اللَّهِ أَعْقِلُهَا وَأَتَوَكَّل
أَوْ أُطْلِقُهَا وَأَتَوَكَّلُ قَالَ اعْقِلْهَا وَتَوَكَّلْ

Narrated by Anas bin Malik when an Arab Bedouin asked Prophet Muhammad, *"Shall I leave my camel untied and seek Allah's protection or should I tie it?"* The Prophet (pbuh) replied, *"Tie your camel and then rely upon Allah."* (Sunan Al Tarmizi)

The most common misunderstanding is to accept only one extreme aspect of *tawakal*. For example, in seeking treatment, one may think that since Allah has given him the disease, he has to fully accept the fate without seeking treatment. The other extreme position is to rely absolutely on the treatment alone and dismiss the role of Allah as Healer.

A person relying solely on medications and doctor's advice may feel disappointed and depressed if the medications do not work. On the other hand, if the medications worked, he might say, *"I could have died if not for the doctor"*. Both these trends of thoughts and action are not in harmony with Islam's concept of *tawakal*.

Understanding the Shar'i and Qadari

In order to practise the true act of *tawakal*, we need to understand the concept of *Shar'i* and *Qadari*.

1. Shar'i

Refers to the injunction of an act as shown in the Quran and hadiths even though it has not been scientifically proven by human knowledge.

For example:

إِذَا وَقَعَ الذُّبَابُ فِيْ إِنَاءِ أَحَدِكُمْ فَلْيَغْمِسْهُ كُلَّهُ ثُمَّ لِيَطْرَحْهُ فَإِن
ّ فِيْ إِحْدَى جَنَاحَيْهِ دَاءً وَفِيْ الآخَرِ شِفَاءً

The Prophet (pbuh) said, *"If a housefly falls in the drink of anyone of you, he should dip it (in the drink), for one of its wings has a disease and the other has the cure for the disease."* (Sahih Al-Bukhari: Volume 4, Book 54, Number 537)

It may not be scientifically sound from our current knowledge but we nonetheless accept it as being authentic since it was narrated from the Prophet (pbuh). It is only later that science and research unravelled the concept of an antidote as neutralising the adverse effects of toxins. This has become the rationale for the syar'i which Muslims should never have doubted from the outset.

The evidence of *syar'i* encourages us to make daily supplications or *du'a* to prevent danger and to be granted good health. For example: Ibn Abbas has narrated that:

عَنِ ابن عَبَّاسٍ أن رَسُولَ اللَّهِ كان يُعَوِّذُ حَسَناً وَحُسَيْناً يقول (أُعِيذُكُمَا بِكَلِمَاتِ اللَّهِ التَّامَّةِ من كل شَيْطَانٍ وَهَامَّةٍ وَمِنْ كل عَيْنٍ لاَمَّةٍ) وكان يقول: (كان إِبْرَاهِيمُ أبي يُعَوِّذُ بِهِمَا إِسْمَاعِيلَ وَإِسْحَاقَ). رواه أحمد وأبو داود والنسائي وصححه الألباني.

"The Holy Prophet (pbuh) sought protection of Hasan and Husain as follows: 'I seek by the perfect words of Allah from all devils and poisonous creatures and from all the envious eyes.'
Narrated Ahmad, Abu Dawud, An-Nasa'i Hasan Sahih

2. Qadari

This refers to sunnatullah, experiences, logic and proven scientific observations that are known to be related to certain outcomes or results.
For example:

a. Permissible ways (Halal): Hard work is well known to be the reason for good marks in exams; or taking paracetamol can reliably relieve fever

b. Forbidden ways (Haram): Stealing from someone or robbing a bank can make someone wealthy; or cutting the queue can shorten one's waiting time.

The Prophet (pbuh) said:

"If you hear that a land has been stricken by plague, do not approach it, and if your land is stricken by plague, do not leave it".
Sahîh al-Bukhari

These early concepts of disease, outbreaks and transmissibility of infections were well elucidated in this hadith. Believers were prevented from approaching a plague-stricken region to prevent the inevitable outcome of acquiring the infection. And counselling them not to leave their region, early ideas on quarantine, is also to prevent another anticipated outcome, which is the further spread of the infection.

A good and practising Muslim therefore should thread the path of *Syar'i* and *Qadari* thoughtfully. A Muslim must at no point in time think, let alone believe, that medicines are their only reason for healing, forgetting that the only Healer is Allah. Embracing the spirit of *Qadari* should motivate us to research for ways to eliminate vaccine-preventable diseases in our quest to reduce illnesses, disabilities and deaths.

Prevention of disease and harm

Prevention is mentioned explicitly and repeatedly in the Quran. It refers to taking preventive actions or steps against harm such as avoiding hell-fire, avoiding punishment, not approaching fornication, keeping away from evil, greed or bad characters. It is one of Allah's laws of the universe *(sunan fi al-kawn).*

In relation to medicine, diseases and their devastating consequences could be prevented before their occurrence. It does not involve knowing the future or the unseen, or even reversing the pre-destined.

Using our limited knowledge, humans try to extrapolate from the present situation and knowledge to anticipate certain disease conditions for which preventive measures can be planned and programmed in public health interventions.

What about immunisation?

Immunisation prevents viral and bacterial infections which may otherwise lead to sickness, disability and death. Therefore it is considered a preventive

act that is permissible in Islam. The allegations that immunisation is against the concept of *tawakkul* and that our immune system is a gift from Allah (therefore immunisation is mistrusting the natural immunity of our body), is evidently misleading and erroneous.

The edict issued by the International Islamic Fiqh Academy *(Majma' Fiqh Al-Islami)* in the "Second Declaration on the Obligatory Nature of Polio Vaccination" has clearly shown that preventing diseases through immunisation does not defy the concept of *tawakal*, similar to the prevention of thirst, hunger and heat. In fact, the perfection of *tawakkul* is by taking the *syar'i* and *qadari* evidences into context.

Tahnik and Immunisation

Another misconception about disease prevention from the anti-vaccine group is about *tahnik* as the universal and true immunisation.

Ibn Hajar al-Asqalani rahimahullah explained *tahnik* as follows:

Tahnik is the process of chewing some sweet food and rubbing it into the ceiling of the baby's mouth. This is done to train the baby to eat and to strengthen it. What should be done during *tahnik* is to observe the opening of the baby's mouth and whether the chewed food has been swallowed. It is preferable to perform the *tahnik* with a *tamr* (dates) or alternatively *ruthab* (wet dates). If neither is available, it can be done with anything sweet such as honey.

Scholars emphasised that the benefit of *tahnik* is to introduce something sweet into the mouth of the baby to stimulate sucking and eating. It is a source of blessing, being a *sunnah* of prophet Muhammad (pbuh), by having dates as the first food in the baby's mouth. Syaikh Muhammad Salih al-Munajjid Hafizahullah also explained the *hikmah* of using the *tamr* (dates) so that the first food entering the baby's stomach is something sweet. Therefore, *tahnik* can be performed with other sweet food if dates are not available. This is also mentioned by Imam Nawawi (al-Nawawi, Sharh Sahih Muslim 1/462)

Clearly, *tahnik* is not for the purpose of immunisation. In fact, there is not a single hadith by the Prophet (pbuh) suggesting that *tahnik* is for that purpose. *Tahnik* is an act to seek the *barakah* (blessings) of Allah for the newborn.

Let us all pray to Allah that we belong to the group of *Mutawakkilun* (those who perform the real meaning of Tawakal).

Prevention is Better Than Cure

Eka Ginanjar, Siti Aisyah Ismail, Musa Mohd Nordin

"Take advantage of five matters before five other matters: your youth, before you become old; your health, before you fall sick; your richness, before you become poor; your free time before you become busy; and your life, before your death."
Narrated by Muslim

As *Allah's khalifah* (caliph) on earth, we are required to play an active role enjoining what is right and forbidding what is wrong. It is our duty to care for our bodies in order to remain healthy and strong to carry out responsibilities as His caliph.

Health is a precious gift from God. Without good health, we cannot live up to our potential as His representative in this world. That is why the Prophet (pbuh) described health as a blessing. Unfortunately, this blessing is often forgotten or rarely recognised by most people.

Although there are lessons from the pain and difficulties of illness, it goes without saying that being healthy is better and preferred than being sick. A healthy person is happier, more productive in his worldly affairs and better able to connect spiritually with his Creator.

In Al-An'am: verse 165, Allah says:

وَهُوَ الَّذِي جَعَلَكُمْ خَلَائِفَ الْأَرْضِ وَرَفَعَ بَعْضَكُمْ فَوْقَ بَعْضٍ دَرَجَاتٍ لِّيَبْلُوَكُمْ فِي مَا آتَاكُمْ ۗ إِنَّ رَبَّكَ سَرِيعُ الْعِقَابِ وَإِنَّهُ لَغَفُورٌ رَّحِيمٌ

"And it is He who has made you successors upon the earth and raised some of you above the others in degrees [of rank] that He may try you through what He has given you. Indeed, your Lord is swift in penalty; but indeed, He is Forgiving and Merciful."

Preventive versus curative

In dealing with various issues, whether economic, social or health, the Quran

and the hadith offer many solutions that are primarily preventive in nature. One of the foremost example is the prohibition of *zina* (fornication).

Allah not only prohibited man from engaging in *zina*, He unequivocally prohibited us from approaching zina. This is because the consequences of zina are much heavier than preventing it from happening in the first place. The same pivotal principle applies to one's health. Preventing a disease is much simpler, easier and more effective than curing it.

On a national scale, the budget for health expenditure could be better directed towards health prevention rather than curative programmes. Prevention programmes have more universal coverage, are cost-effective, invests in the nation's future health and ensures better long-term returns.

Islamic concepts in disease prevention

The primary sources of Islamic teachings are from the Quran and the authentic traditions *(hadith)* of the Prophet (pbuh). Although the Quran is a book of spiritual guidance, it also makes reference to health and healing. There are six verses in the Quran known as *syifaa'* (healing) verses.

وَإِذَا مَرِضْتُ فَهُوَ يَشْفِينِ

"And when I fall sick, He heals me."
As-Shu'ara 26:80

There are many *hadith* of Prophet Muhammad (phuh), both in word and deed, in relation to health. From the Quran and *hadith*, several principles of health in Islam can be summarised as follows:

1. The Prophet said, *"Cleanliness is half of faith (iman) (Muslim)"*. This *hadith* connecting cleanliness with belief is the cornerstone in Islam's advocacy for optimal health.

2. The Quran advocates healthy eating and encourages believers to eat only good and pure food.

يَا أَيُّهَا النَّاسُ كُلُوا مِمَّا فِي الْأَرْضِ حَلَالًا طَيِّبًا وَلَا تَتَّبِعُوا خُطُوَاتِ الشَّيْطَانِ ۚ إِنَّهُ لَكُمْ عَدُوٌّ مُبِينٌ

O mankind, eat from whatever is on earth [that is]
lawful and good and do not follow the footsteps of Satan.
Indeed, he is to you a clear enemy.
Al-baqarah 2:168

Numerous statements in the Qur'an and hadith encourage Muslims to be moderate in eating and drinking.

يَا بَنِي آدَمَ خُذُوا زِينَتَكُمْ عِندَ كُلِّ مَسْجِدٍ وَكُلُوا وَاشْرَبُوا وَلَا تُسْرِفُوا ۚ إِنَّهُ لَا يُحِبُّ الْمُسْرِفِينَ

And eat and drink and be not extravagant;
surely He does not love the extravagant.
Al-A`raf 7: 31

"No human ever filled a container more evil than his belly. The few morsels needed to support his being shall suffice the son of Adam. But if there is no recourse, then one third for his food, one third for his drink and one third for his breath."
Ahmad and At-Tirmidhi

3. The Prophet (pbuh) in various hadith enjoined his companions to exercise. He said, *"A strong believer is better than a weak believer"* (Muslim). Thus, a Muslim is enjoined to not only be strong in faith and character, but also in physical strength and fitness through regular exercise.

4. Islam recognises the existence of contagious diseases and the Prophet (pbuh) commanded us to avoid such diseases. He said: *"Run away from the leper same as you would from a lion."* [Bukhari and Muslim].

5. Islam also introduced the concept of quarantine in the event of an infectious outbreak. The Prophet (pbuh) said: *"If you hear that a land has been stricken by plague, do not approach it, and if your land is stricken by plague, do not leave it".* [Sahîh al-Bukhari]

6. Believers are urged to seek medical treatment when ill. When a cure is available, some scholars would even suggest it as being mandatory. The Prophet (pbuh) said: *"Seek medical treatment, for truly Allah does not send down a disease without sending down a cure for it. Those who have knowledge of the cure know it, and those who are ignorant of it do not."* [Musnad Ahmad]

7. The hadith also illustrates Islam's high regard for people who are experts and highly trained in their specialty, and Muslims are enjoined to seek treatment from these health professionals. This is further alluded to in the following hadith: At the time of the Prophet Muhammad, a man fell ill. The Prophet said, *"Summon the physician of the so and so tribe for him."* (Ahmad). It also shows the Prophet's criticism of the ignorant who blindly practise the art of healing without the pre-requisite medical knowledge and skills.

Immunisation from the Islamic perspective

Disease prevention is one of the gold standards of best practises in medicine and many of the verses of the Quran and the Hadith emphasise the bench mark practice of "prevention is better than cure." As a health programme and strategy it is very much in line with the jurisprudence principle of "closing all avenues of destruction" سد الذريعة

Immunisation is a form of primary prevention against more than 28 vaccine preventable diseases eg diptheira, tetanus, whopping cough, polio, measles, mumps rubella etc. Every year 2.5 million deaths are prevented and ¾ million children are saved from disability by immunisation. And there is an opportunity to save more lives if immunisation is more readily available to children in developing countries. Immunised children also have higher scores in IQ, mathematics and language.

All these are in accordance with the priorities of the Islamic law *(Maqasid Shari'ah)* which seeks the preservation of five objectives, namely:

1. *Hifz Din* (preservation of religion and morality): A Muslim who is well protected from vaccine-preventable diseases is better able to perform his religious duties and obligations

2. *Hifz Nafs* (preservation of life): Immunisation has been proven to save millions of lives worldwide, and reduce morbidity (illness) and mortality (death).

3. *Hifz Nasl* (preservation of lineage): Parents who immunise their children will protect them from getting infected with dangerous diseases, enhance their general health and enable them to be parents themselves in later life.

4. *Hifz Aql* (preservation of the intellect): Immunised children are protected from diseases that injure their brains eg meningitis or encephalitis which would impact negatively on their IQ and other cognitive functions.

5. *Hifz mal* (preservation of wealth): Immunisation is cost-beneficial and cost-effective to the economy of the nation. For each birth cohort vaccinated in the US, $43 billion is saved annually in medical costs.

As a conclusion, immunisation is beneficial both from the individual and public perspective. At the individual level, it helps to strengthen a person's immune system, thus protecting him from various deadly diseases. At the public level, immunisations will save costs and give rise to a healthy,useful and productive society. It is a health interventional strategy and public health programme which is well-founded on the principles of Islamic jurisprudence (Maqasid Shari'ah).

The Permissibility of Judicially Prohibited and Impure Substances in Medicines

Musa Mohd Nordin, Husna Musa

It looks like the porcine conundrum is making its rounds yet again. Suffice to begin the narrative by quoting a verse each from the *Quran* and the *Hadith* which sums up the compassionate and humane nature of Islam.
Allah SWT says in the *Quran*:

"And strive for Allah with the striving due to Him. He has chosen you and has not placed upon you in the religion any difficulty."

And an authentic tradition narrated by Aisha (ra);

"If given an option between two actions, the Prophet (pbuh) would surely choose the easier one, as long as it is not sinful."

And we firmly believe this spirit and approach pervades the corpus of the jurisprudence of facilitation *(Fiqh Taysir)*. At no point in time does it blemish the belief nor practice of the faithful because scholars have anticipated the challenges of modernity and have reiterated;

"Allah will bless the believer who recognises and engages with the new world, yet remains true to his religious values."

History will testify that the Muslim scientists dominated virtually all aspects of knowledge and research from 600 – 1700 AD. Az-Zahrawi (930-1013 AD), the father of modern surgery, was pioneering new surgical instrumentations when Europe was restricted by a religious edict in 1163 AD which ruled;

"All forms of surgery must be stopped in all medical schools by all surgeons."

Is it any wonder that Martin Kramer, an American historian once wrote;

"Had there been Nobel Prizes in 1000,
they would have gone almost exclusively to Muslims."

Somehow, the Muslims lost it along the way, but the following hadith inspires Muslims to catch up on lost ground and rejuvenate their quest for leadership in the sciences;

"A word of wisdom is the lost property of a Muslim.
He should seize it wherever he finds it."

It is in this vein that the contemporary Muslim scholar, Shaykh Dr Yusuf al-Qaradhawi said to the effect;

"Two areas of human activities (muamalat) which
requires cutting edge edicts (fatwa) are economics and medicine."

Hence, it is not surprising that the many Councils of Jurisprudence worldwide, such as the European Council of Fatwa & Research (ECFR) chaired by Shaykh Dr al-Qaradhawi, deliberated profusely on issues related to medicine and biotechnology. These Councils are updated of the latest and best practices in medicine by regular meetings with the Islamic Organisation of Medical Sciences (IOMS) based in Kuwait.

The issue of human cloning is a pertinent example of *'cutting edge fatwas'*. In 1983, two papers were presented discussing the probability and permissibility of cloning humans through In-Vitro Fertilisation (IVF). The science then was at the level of cloning plants and marine life. 13 years later, Dolly the sheep was cloned in 1996 and the IOMS immediately updated their human cloning *fatwa*, while the scientific world was still bedazzled by this new science.

The issue of substances of porcine origin in food and medicine is an archaic one. Nonetheless, the ECFR has dealt with it comprehensively when deliberating the permissibility of the Oral Polio Vaccine (OPV) which is manufactured using porcine-based trypsin. This was published in their 11th Session of the ECFR held from 1-7 July 2003, in Stockholm.

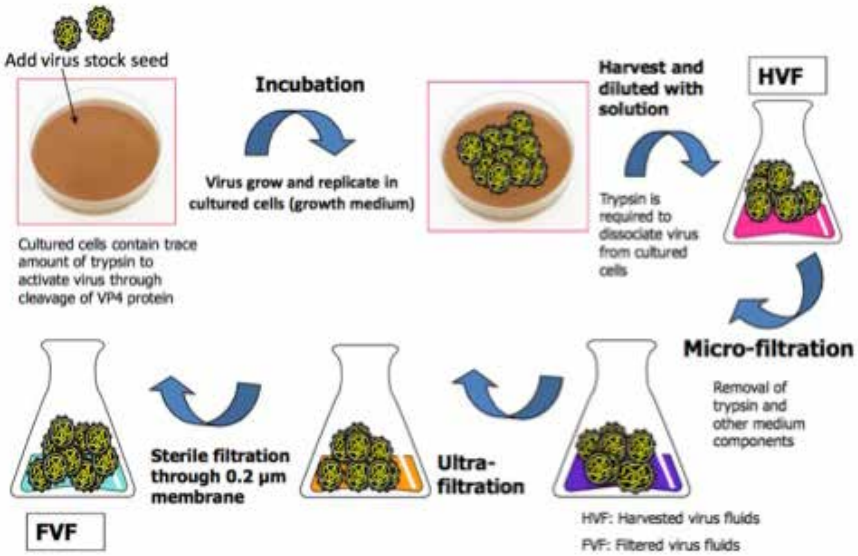
The ECFR argued as follows:

a. What God forbids is the partaking of pork, and trypsin has nothing to do with pork

b. Even if we admit that trypsin is forbidden, the amount used in preparing the vaccine is negligible, if one applies the rule that "when the amount of water exceeds 2 qillas (343 litres)", impurities no longer affect it"

c. Supposing that trypsin is unclean, it is thoroughly filtered, that it leaves no traces whatsoever in the final vaccine

d. In case the first three arguments are still insufficient, the haram (forbidden) is made permissible in cases of necessity.



In conclusion, they emphasised:

"The Council urges Muslim leaders and officials at Islamic Centers not to be too strict in such matters that are open to considered opinion and that bring considerable benefits to Muslim children, as long as these matters involve no conflict with any definite text."

Such is the latitude of rationale and magnanimity of our religious scholars *(fuqaha)* in addressing the bigger picture of child health, child survival strategies and the advocacy of life-saving vaccines.

In a much earlier seminar in 1995, the Eastern Mediterranean Regional Office (EMRO) of the World Health Organisation in collaboration with IOMS deliberated on *"The judicially prohibited and impure substances in foodstuffs and medicines."* This was attended by 112 religious scholars and medical experts.

Amongst others, the IOMS issued the following recommendation in relation to bio-transformation *(istihalah)*;

"Transformation which means the conversion of a substance into another substance, different in characteristics, changes substances that are judicially impure, or are found in an impure environment, into pure substances, and changes substances that are prohibited into lawful and permissible substances."

Accordingly IOMS added:

"The gelatin formed as a result of the transformation of the bones, skin and tendons of a judicially impure animal, is pure and judicially permissible to eat it."

This is essentially basic biochemistry, whereby the gelatin is broken down to a mixture of individual amino acids which is not specific to any animal species through a process of hydrolysis. Bovine sources of animal collagen are specifically avoided based on safety reasons, to prevent the risk of Transmissible Spongiform Encephalopathy (TSE).

The Regional Director of EMRO instructed all 22 countries and territories in the Middle East, the North Africa, the Horn of Africa and Central Asia;

"In the light of the above (fatwa); you may wish to issue a statement that includes this legal opinion, in order to relieve all Muslims in the nation, whether adults or youths, men or women, from the embarrassment they feel when taking drug gelatinous capsules and similar gelatinous capsules as vitamins."

We have read fatwas from religious scholars in Malaysia, which, unlike the ECFR and IOMS are individual-centric, random, ill-researched and anecdotal in nature. Their lack of grasp and understanding of the new sciences have made them ultra-conservative, restrictive and prohibitive in their religious edicts.

We have endeavoured to mainstream evidence-based medicine (EBM) of the highest quality and which should henceforth dictate our best clinical practices. More importantly, it is sanctioned as *Shari'ah* compliant by the highest authorities of jurisprudential scholarship among Muslim scholars worldwide. This excellent collaboration of the best brains in medicine and jurisprudence has lightened the burden upon the *Muslim Ummah* (community), embracing not only the jurisprudence of facilitation *(Fiqh Taysir)* but also of priorities *(Fiqh Awlawiyaat)*, realities *(Fiqh Waqi'ah)* and balance *(Fiqh Wasatiyah)*.

All of these are undertaken in response to the call of Allah in the *Quran* which reads;

"Allah commands doing justice, doing good to others"

This is primarily the end point of the *Maqasid as-Shari'ah* (priorities of Islamic jurisprudence), which is the transformation towards justice, the preservation of public interest *(maslahah ammah)* and mutual benefit *(masalih mushtarakah)*.

We urge the religious authorities to recognise the invaluable heritage of medical *fatwas* before us and not attempt to reinvent the wheel. They should instead incorporate these *shari'ah*-compliant best clinical practises into the corpus of our nation's jurisprudence in medicine.

The Permissibility of Rotavirus Vaccines

Musa Mohd Nordin, Husna Musa

Poor sanitation, insufficient water treatment systems, lack of access to appropriate medical care and lack of life-saving vaccines lead to an estimated 800,000 diarrheal deaths in children under-five and millions more hospitalisations every year.

While many pathogens can cause diarrhea, rotavirus (RV) is the leading cause of severe and fatal diarrhea in infants and young children. Virtually every child in the world would have been infected with RV by the age of three. Globally, RV gastroenteritis kills 527,000 (475,000 - 580,000) children under five and is responsible for millions of hospitalisations and clinic visits each year. Ninety-five percent of RV deaths occur in developing countries, particularly Africa and Asia.

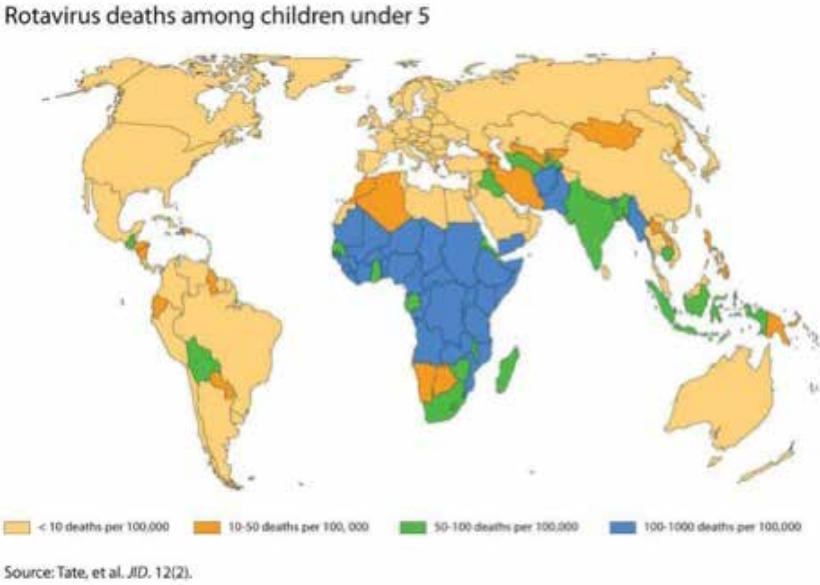


Figure 1

In the management of diarrhea, basic interventions include encouraging infant breastfeeding, improving access to clean drinking water, zinc supplementation and oral rehydration solutions (ORS). However, RV is so contagious and resilient that these simple measures cannot eliminate it.

The RV vaccine mimics the protective first infection without causing illness. After repeated doses, a strong and broad heterotypic immunity is induced against future RV infections.

Two orally administered RV vaccines are available today. Both have been extensively studied in trials in Africa, Asia, Europe, Latin America and the United States. The special supplement, "Rotavirus Vaccines for Children in Developing Countries," in the journal 'Vaccine' in April 2012, reaffirmed that RV vaccines are effective, safe, and cost-effective.

In Islamic Jurisprudence *(Maqasid as-Shari'ah)*; the preservation of life comes only second after the preservation of Deen. Life is a gift from Allah (SWT) and its protection and continuation is of utmost importance and urgency. The sanctity of human life is emphasised in the *Quran*:

وَمَنْ أَحْيَاهَا فَكَأَنَّمَا أَحْيَا النَّاسَ جَمِيعًا ۚ

…and if anyone saved a life,
it would be as if he saved the life of all mankind.
Surah al-Ma'idah: 32

The Prophet (pbuh) related, *"We are a people who do not eat until we are hungry. And if we eat, we do not eat to our fill."* This narration serves as the backdrop to the powerful medical maxim "Prevention is better than cure", further reinforced by the jurisprudence principle of *"sadduzzaraik"* – closing the doors of destruction.

The presence of porcine elements in the manufacturing process of two RV vaccines, Rotateq *(MSD)* and Rotarix *(GSK)*, has triggered alarm in the Muslim medical fraternity, Fatwa Councils and general public. This, however, is not a new issue because it has long been addressed by Muslim physicians, scientists, public health experts and jurists *(fuqaha)* at the cutting edge of vaccinology and child survival strategies.

The Oral Polio Vaccine (OPV) which has led to the virtual global eradication of polio, utilises small, negligible amounts of trypsin derived from porcine origin, to disconnect the contiguous cells in the tissue culture. A similar technology is utilised in the manufacturing process of the RV vaccines.

The European Council of Fatwa & Research (ECFR) in 2003 wrote: *"Out of piety, some Muslims in various parts of the world, particularly in East Asia, have made the fatwa (ruling) that it is not permissible to administer this vaccine to children,*

due to the fact that porcine trypsin is used in its preparation."

They argued as follows:

a. God forbids the partaking of pork, and trypsin has nothing to do with pork

b. Even if trypsin is forbidden, the amount used in the vaccine preparation is negligible, according to the rule that "when the amount of water exceeds 2 *qillas*, impurities no longer affect it"

c. Supposing trypsin is unclean, it is thoroughly filtered, leaving no traces whatsoever in the final vaccine

d. If the three arguments forwarded are still insufficient, the *haram* (forbidden) are made permissible in cases of necessity

Since the manufacturing process of the two oral vaccines (OPV and RV) both involve minute amounts of trypsin which is later removed by ultra-filtration, the pivotal judicial edict of the permissibility of OPV can be similarly applied to the RV vaccine.

In their concluding remarks, they emphasised, *"The Council urges Muslim leaders and officials at Islamic Centres not to be too strict in such matters that are open to considered opinion and that bring considerable benefits to Muslim children, as long as these matters involve no conflict with any definite text."* Such is the rationale and magnanimity of our scholars *(fuqaha)* in addressing the bigger picture of child survival strategies and the advocacy of life-saving vaccines.

79 countries in the world have introduced RV vaccination in their national immunisation programmes including Morocco, Iraq, Bahrain, Qatar, Yemen, Saudi Arabia, Sudan and Pakistan.

Integrated with other interventions such as hand washing and clean drinking water, RV vaccination offers the best hope for preventing severe diarrheal disease, and could save nearly 2.4 million lives by 2030.

Lessons can be learnt from an earlier fatwa issued on the use of OPV which is similarly manufactured using trace amounts of porcine trypsin. The ECFR added, *"the hesitation of some parents to have their children immunised with this vaccine (OPV) poses a risk to Muslim children. At the same time, it gives an unfavourable image which portrays Muslims as hindering a process that aims to eradicate, with God's permission, the existence of this disease on earth once and for all. After all, this eradication cannot be complete while there is even one child on earth carrying the virus."*

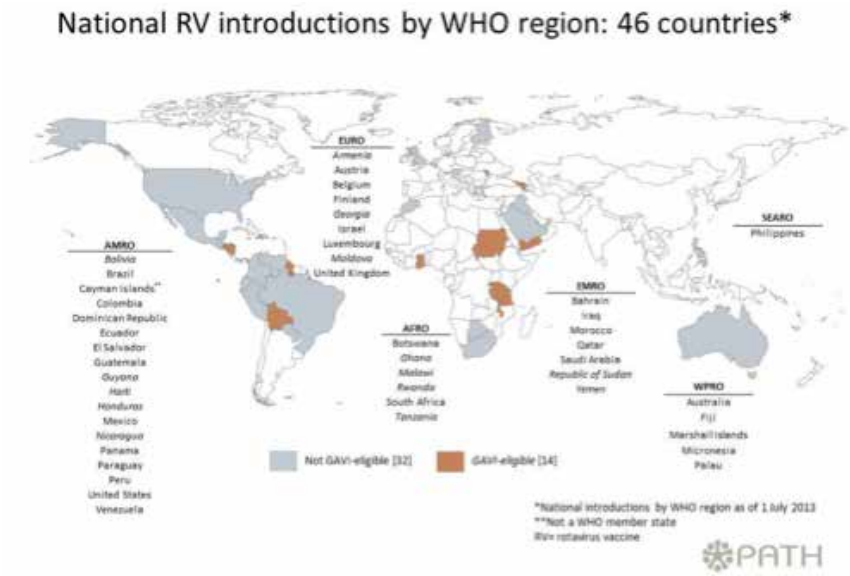


Figure 2

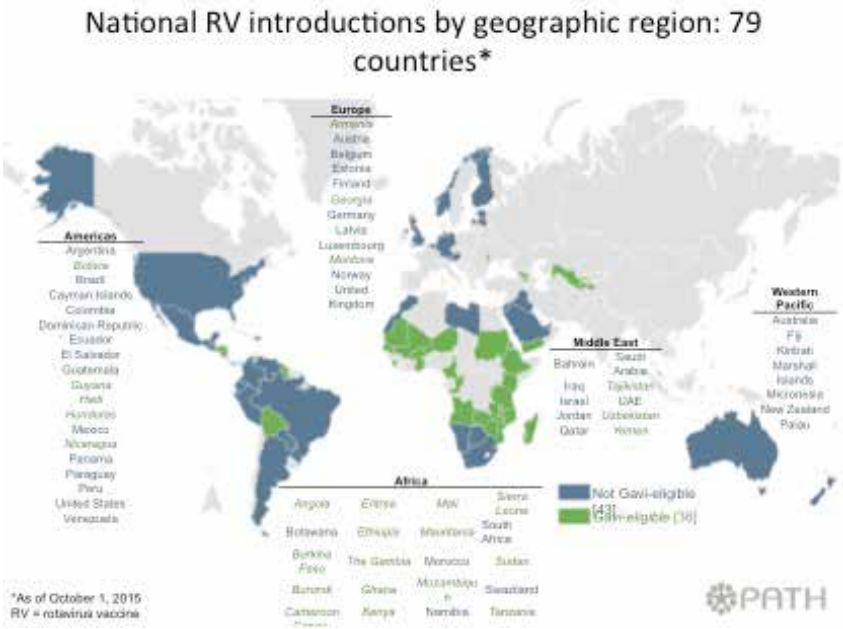


Figure 3

Poliomyelitis: The End Game

Musa Mohd Nordin, Husna Musa

Polio is an abbreviation of poliomyelitis from the Greek language meaning "gray," muelos, "marrow," that causes "inflammation of the gray matter of the spinal cord." The earliest cases of polio predate recorded history. An Egyptian stone carving, estimated to date between 1580-1350 B.C., depicted a young man with a deformed limb, possibly caused by polio.

There were numerous outbreaks in the 18th century. English physician Michael Underwood first clinically described polio as a 'debility (physical weakness) of the lower extremities'. Two Austrian physicians, Karl Landsteiner and E. Popper first identified the polio virus in 1908, making polio a notifiable disease.

There was an estimated 350,000 cases of polio in 1988. In the same year, the World Health Assembly resolved that polio would be eradicated by the year 2000. This has been a moving target, with various issues including wars, natural disasters, and poverty in developing countries in Asia and Africa, preventing this from being achieved. The Global Polio Eradication Initiative

(GPEI), a partnership spearheaded by national governments - WHO, UNICEF, the US Center for Disease Control, Rotary International - has since adopted a new strategy, the Eradication and Endgame Strategic Plan, which targets polio eradication by 2018.

The polio virus

Polio is a highly infectious disease caused by the RNA enterovirus. The three serotypes 1, 2 and 3 have minimal heterotypic immunity between them. The virus enters through the mouth, and starts replicating in the pharynx, gastro-intestinal tract and lymphatics. Hematologic spread (transmission through the bloodstream) moves on to the lymphatics, while the central nervous system facilitates its spread along the nerve fibres, with selective destruction of the motor neurones.

The bulk of clinical outcomes (90-95%) upon poliovirus infection is inapparent or a sub-clinical infection. 4-8% experience a febrile episode or an upper respiratory tract infection. 1-2% have a non-paralytic poliomyelitis. Paralytic poliomyelitis is seen in 0.1-1%. One third of these recover completely whilst the other two thirds have varying degrees of motor weakness. The mortality rate is between 4-6%.

Polio vaccines

The Salk trivalent inactivated polio vaccine (IPV) was first discovered in 1955 by Jonas Salk. Eight years later, Albert Sabin founded the trivalent oral polio vaccine (OPV) in 1963. Sabin's OPV was included into the World Health Organisation's Expanded Program of Immunisation (EPI) due to its lower cost and long-term efficacy.

The OPV is a life attenuated oral vaccine and has been responsible for the global decline in polio. However, it causes the rare vaccine-associated paralytic poliomyelitis (VAPP) and in developed countries has been replaced by enhanced IPV (eIPV).

The Global Epidemiology of Polio

Today more than ever, the goal of a polio-free world is a tangible reality. In 1994, the WHO Region of the Americas was certified polio-free, followed by the WHO Western Pacific Region in 2000 and the WHO European Region in June 2002. The only 3 remaining polio-endemic countries are Nigeria, Pakistan and Afghanistan.

Global Polio Eradication Initiative (GPEI) strategic plans

The GPEI employed these key strategies to achieve its polio-free world objectives:

1. Maintain high infant immunisation coverage

2. Mass immunisation campaign though National Immunisation Days

3. Localised mopping up campaigns

4. Ensure high quality Acute Flaccid Paralysis (AFP) surveillance

After the eradication of wild poliovirus, the continued use of OPV would compromise the goal of a polio-free world. It will result in a predictable burden of polio disease due to VAPP, leading to a predictable rate of polio outbreaks due to circulating vaccine-derived polio viruses (cVDPVs).

Acknowledging the inherent risks, the GPEI Strategic Plan 2004-2008 included, among others, the coordinated cessation of OPV use, or a phased replacement of OPV with IPV.

Polio endemic countries and the religious dimension

India was once considered the most difficult challenge to the GPEI strategic plans towards a polio-free world. India interrupted the transmission of Wild Polio Virus (WPV) for two years and was removed from the list of polio endemic countries in February 2012. This reinforces the fact that polio can be eliminated even in the most challenging of circumstances.

Since 2003, WPV of Nigerian origin has been imported into 26 countries in Africa, the Middle East, and Asia, and has led to re-established transmission (>12 months) in Chad and Sudan.

Multiple factors contributed to the vaccine boycott in Nigeria, most notably rumours and misinformation on OPV. The OPV was alleged to contain unsafe substances which can lead to infertility, and that the OPV was made with haram constituents (not permissible by Islamic Law).

Similar loss of public confidence in OPV was observed in Pakistan and Afghanistan, leading to low OPV uptake and Supplementary Immunisation Activities (SIAs) that failed to reach >80% of children in high-risk states.

The East Mediterranean Regional Office of the WHO (EMRO) submitted the issue on the permissibility of the OPV to the European Council of Fatwa and Research (ECFR) in 2003. During its 11th Regular Session at Stockholm, Sweden from 1-7 July 2003, the ECFR addressed the issue:

"Out of piety, some Muslims in various parts of the world, particularly in East Asia, have made the fatwa (religious edict) that it is not permissible to administer this vaccine to children, due to the fact that porcine trypsin is used in its preparation."

"First, it has been medically established that the administration of this medicine is useful, that with God's permission it immunises children against polio; and that so far there is no alternative prevention. Consequently, it is permissible for use for purposes of treatment and prevention, especially since forbidding its administration results in great harm. Even if it is admitted that this liquid vaccine is impure, there are ample cases in Islamic jurisdiction where the prohibition of impurities is waived. In this case, the impurity is exhausted through lavation and multiplication. Moreover, this is a case which involves a necessity or a need that amounts to a necessity. It is well known that one of the principal purposes of Islamic Law is to achieve benefits and ward off harm and corruption. Second, the Council urges Muslim leaders and officials at Islamic Centres not to be too strict in such matters that are open to considered opinion and that bring considerable benefit to Muslim children, as long as these matters involve no conflict with any definite text."

Scientific declaration for polio eradication and endgame strategic plan

The Federation of Islamic Medical Associations (FIMA) viewed the GPEI 2013-2018 strategic plans seriously and favourably, and issued its Cairo Declaration for Polio Eradication on 28 February 2013 following their executive deliberations (see Appendix).

This FIMA executive committee meeting was also the precursor to the EMRO-organised high level consultation of Islamic scholars and organisations from 6 to 7 March 2013 at Cairo's WHO Regional Office, to identify the best strategies to enhance solidarity among Islamic scholars and leadership, counter false propaganda about the polio vaccine, promote its use to protect children of the Muslim ummah against polio, and call for urgent action to eradicate this paralyzing disease in Muslim communities.

To reaffirm its commitments to the global polio eradication campaign, FIMA joined the fraternity of scientists and technical experts from 80 different countries to launch the Scientific Declaration on Polio Eradication on 11 April 2013. The world's scientists converged to endorse the Eradication and Endgame Strategic Plan, a new strategy by GPEI to reach and sustain polio eradication (see Appendix).

The declaration highlights 5 major issues:

a. Polio eradication is possible, considering the major progress achieved thus far.

b. The Eradication and Endgame Strategic Plan plots definitively the roadmap to a polio-free world.

c. Apart from polio vaccinations, GPEI (2013-2018) emphasises the importance of universal mass vaccinations against other diseases.

d. Warning that any scaling back of vaccination programmes and funding would have disastrous consequences.

e. Emphasise the importance of close collaboration and partnerships to achieve the historical milestone of polio eradication.

Conclusions

FIMA hereby calls on all Islamic religious and community leaders to provide a strong message of support for polio eradication activities and the need to ensure all children are fully immunised against polio and other vaccine-preventable diseases.

We urge all levels of political, religious and civil society in Muslim countries to overcome any remaining cultural, religious, political and security obstacles currently preventing all children from being reached and immunised against polio and other vaccine-preventable diseases.

We earnestly call on all political, religious and civil society leaders to ensure the safety and security of frontline health workers, to enable them to perform their heroic tasks.

We plead to governments in Muslim countries to prioritise and mobilise necessary financial resources to enable the full implementation of polio eradication strategies.

We call upon all FIMA affiliates in their respective countries to be active partners of the Global Polio Eradication Initiative, providing leadership towards the creation of a world free from polio for all our children. Our collective efforts towards the creation of a polio-free world will undoubtedly be our legacy to the future generation.

The Hajj Vaccines

Musa Mohd Nordin, Husna Musa

The Hajj is the Muslim's pilgrimage to Mecca, Saudi Arabia. The large congregation of about 2 million Muslims in the Holy Land occurs from the 10-15 Dhulhijjah, the 12th month of the Islamic calendar. The Islamic calendar is eleven days shorter than the Gregorian calendar of the western world. The Gregorian date of the Hajj is eleven days earlier from year to year.

The Saudi Arabia Ministry of Health publishes health requirements for Hajj pilgrims to Mecca on an annual basis.

Invasive Meningococcal Disease (IMD)

Adults and children above 2 years old arriving for the Umrah or Hajj pilgrimage (or for seasonal work in the Hajj area) are required to produce a vaccination certificate of the quadrivalent vaccine against IMD which has been issued not more than 3 years and no less than 10 days prior to arrival in Saudi Arabia.

The vaccines of choice are the Meningococcal Conjugate Vaccines (MCV) which can be administered to children below 2 years to confer immune memory and herd immunity. Three choices are available for use; *Menveo (Novartis); Menactra (Sanofi Pasteur) and Nimenrix (Glaxo Smith Kline).*

This has replaced the older Meningococcal Polysaccharide Vaccines (MPSV), which can only be used after 2 years of age and does not confer immune memory or herd immunity. The MPSV includes *Menomune (Sanofi Pasteur)* and *Mencevax (GSK).*

Seasonal Influenza

The Saudi Ministry of Health recommends the seasonal influenza vaccine for prospective Hajj pilgrims before arrival. Those at increased risks include the elderly, those with chronic lung or heart disease, diabetes or immune suppression.The most recent quadrivalent influenza vaccine as advised by WHO eg *Quadri Flu (Sanofi Pasteur)* should be used.

Invasive Pneumococcal Disease (IPD)

Individuals aged 65 years and above, or with chronic medical conditions, should also get vaccinated against pneumococcal infection. While there is no vaccination against MERS-CoV, vaccinations against influenza and pneumococcal infection will help prevent these common infections with similar symptoms. The pneumococcal conjugate vaccine (PCV) *Prevenar13 (Pfizer)* is the preferred choice. Other pneumococcal polysaccharide vaccines (PPSV) available include *Pneumovax (Merck Sharp & Dome)* and Pneumo23 *(Sanofi Pasteur).*

Other vaccines for Hajj

Check that the recommended immunisations for your age are up to date, particularly:

1. Diptheria (D), Tetanus (T) and acellular Pertussis (ap). You may require a booster of Tdap in the form of *Adacel (Sanofi Pasteur)* or *Boostrix (GlaxoSmith & Kline).*

2. With the recent resurgence of Measles(M) and Rubella (R), check that you have had 2 doses of MMR or a previous history of natural measles. MMR is available as *MMR II (Merck Sharp & Dome)* or *Priorix (GlaxoSmith & Kline).*

3. Other vaccines to consider are food and water borne infections eg Hepatitis A and Typhoid Fever.

Pilgrims from select countries

The Saudi Arabia Ministry of Health has other vaccination requirements for Hajj pilgrims entering from certain countries.

Yellow Fever

All travellers arriving from countries known to be infected with Yellow Fever (as per WHO) must present a valid yellow fever vaccination certificate. The list of countries can be found here: www.fitfortravel.nhs.uk/advice/disease-prevention-advice/yellow-fever/mandatory-certificate-countries.aspx

Poliomyelitis

All travellers arriving from countries with circulating polio virus or from countries at high risk of re-importation of polio virus, regardless of age and vaccination status, should receive one dose of oral polio vaccine. Visit www.who.int/wer/2014/wer8932_33.pdf?ua=1 for full details.

The Role of Muslim Doctors in Immunisation

Mohammed Fauzi Abdul Rani, Musa Mohd Nordin

The history of immunisation is well known with Edward Jenner's discovery of immunisation with variola (smallpox). He successfully demonstrated that immunisation with cowpox prevented the person from contracting variola. History however suggests that vaccination was already practised in India, China and Turkey before Edward Jenner's experiments. Lady Montague, wife of an English ambassador to Turkey, was known to have told some English doctors including Jenner on how the Turks performed vaccination against variola. This expose possibly influenced Edward Jenner to initiate vaccination in England then, making him the 'father of immunisation' as he is known today.

This historical fact should encourage every Muslim physician to aspire to be at the cutting edge of new knowledge, research and discovery and manifest them in best practises of immunisation in their respective countries.

The impact of immunisation

Immunisation prevents the spread of infectious disease. Edward Jenner began immunisation against variola in 1796 and 184 years later, WHO declared that smallpox was eradicated in 1980. Polio, a disease which maims and kills, is now very close to eradication. It is presently only endemic in three countries, namely Afghanistan, Pakistan and Nigeria. The last case of indigenous polio in Malaysia was in 1985.

Malaysia's National Immunisation Programme (NIP) began in 1950 with the smallpox immunisation. We have since included tuberculosis, hepatitis B, diphtheria, acellular pertussis, tetanus, polio, haemophilus influenza B, measles, mumps, rubella, human papilloma virus (HPV) and Japanese encephalitis vaccines (Sarawak) in our NIP.

The coverage of childhood vaccination in this country is close to 95%, largely due to the widespread adoption and implementation of the national

programme by both public and private health care institutions in the country. Our role is to help ensure that this success story is maintained.

Adult immunisation

Adults (above 18 years old) are immunised for various reasons. Due to waning immunity, immunisation received during childhood may require boosting. This applies to diphtheria, tetanus and pertussis.

Some adolescents and adults may have missed the second dose of MMR and may require immunisation, more so now with the recent outbreaks of measles, mumps and rubella in the US and Europe.

Adults with pertussis may pass it to younger children. This can be overcome by updating their acellular pertussis (ap) vaccine uptake.

The elderly aged 65 years and above are more likely to acquire influenza and invasive pneumococcal disease (IPD), making them very ill and succumbing to these diseases. The influenza, pneumococcal and shingles vaccines are highly recommended for this age group and those with chronic medical conditions affecting the heart, lungs or kidneys.

Travel vaccines are available for both adults and children. Hajj pilgrims should get immunised against meningococcal, influenza and pneumococcal before travelling to Mecca. Healthcare workers and adults in the F&B industry should receive specific vaccine such as typhoid, hepatitis A to prevent the spread of air and food-borne diseases.

Most childhood diseases are more severe if contracted in adulthood. The chicken pox vaccine, for example, should be considered if one has not had the illness in childhood.

Many adults assume that the immunisation they receive during childhood would confer lifelong immunity. This is generally true except for the immunisations that require boosting due to waning immunity. Some adults even unknowingly missed immunisation during childhood.

There are also newer vaccines that were not available before (eg chicken pox, HPV, shingles and pneumococcal conjugate vaccines). Hepatitis B, introduced into our NIP in 1989, prevents against hepatitis and liver cancer. Many adults would have missed this and should check with their doctors to protect themselves against these very serious liver diseases.

HPV, now given to children at 13 years old in our NIP, prevents against cervical cancers. Adult women can get the HPV vaccine from their GPs.

Maintaining the success of immunisation

Malaysia has achieved considerable success in childhood immunisation, but with success often comes complacency. As doctors, we should continue to ensure that the childhood immunisation programme is meticulously implemented in both the private and public health sectors. The creeping anti-vaccination movement is a big danger that must be addressed at every level and opportunity as it may potentially have a negative impact on our currently successful NIP.

Our roles in the adult immunisation programme are numerous. Awareness is very low among the public as well as healthcare professionals. It must be raised at every level and opportunity to educate both target groups, especially among healthcare professionals.

The public must be educated on the benefits and dangers of non-immunisation among adults especially those with risk factors through public programmes and the media. This duty must be shouldered by all Muslim doctors, especially when our Muslim predecessors were among those who pioneered the science of immunisation.

Religious Views on Immunisation

Musa Mohd Nordin, Husna Musa

Religious objections against immunisation began since the development of the smallpox vaccine in 1796 by Jenner. They were concerned that vaccination was against God's will and providence. The Anti-Vaccination League was formed in the UK in 1853 to oppose any attempts at mandatory vaccinations of children. Similar campaigns were organised in Holland and the US.

The risks of vaccine-preventable diseases (VPD) are elevated in non-immunised individuals. The risk for measles and pertussis is 6-35 times higher in unvaccinated people compared to the vaccinated. Not surprisingly, VPD outbreaks have been reported in religious communities. These include diphtheria cases in Darul Arqam, Pahang; haemophilus influenza B among Amish children in Pennsylvania, US; hepatitis A in Ontario, Canada; measles outbreaks in religious communities in US, Holland, Israel, France, Belgium and Canada; mumps outbreaks in US, Canada and Israel and similar epidemics of pertussis, poliomyelitis, rubella and tetanus in many countries resulting in hospitalisations, disabilities and deaths.

As healthcare professionals, we encounter patients of various religions in our daily clinical practice, hence we have to be respectful of their religious views on immunisation. It however needs to be emphasised that the religious behaviours of individuals or communities may not reflect the theological teachings of their religions. The same scriptures may be interpreted differently by different denominations within any one religion. And since vaccines did not exist when the holy books were written, exegesis of the texts will frame their views of immunisations.

Below are the views of other religions on vaccines and immunisation.

Hinduism

We are not aware of any formal religious edict from Hindu scholars on immunisation. In predominantly Hindu nations such as India which is 80% Hindu, immunisation is widely accepted. India, home to 1.2 billion people, which until 2009 accounted for half of all polio cases globally, has been polio-

free since 2011. The presence of trace amounts of bovine excipients (inactive ingredients) has not been met with Hindu concerns or objections.

Buddhism

The first reports of vaccination against smallpox were of Buddhist nuns making powdered smallpox scabs and blowing them into noses of subjects. The 14th Dalai Lama, the Tibetan Buddhist spiritual leader, launched the polio eradication campaign in India in 2010. Vaccination programmes are widely accepted in mainly Buddhist countries.

Christianity

There are no objections from the scriptures towards immunisation for most Christian denominations. Amongst the biggest group within Christianity, the Roman Catholic Church, is supportive of immunisation, as it confers protection to both the individual and the larger community. There are, however, concerns about the use of viral vaccines formulated in cells lines with remote fetal origins. They have advocated the use of alternatives, if available.

A few Christian groups have interpreted scriptural texts as against the practice of immunisation. These include the Church of Christ, Scientist (Christian Science) who believe in faith healing and oppose vaccinations.

The Watch Tower Society, the legal entity of Jehovah's Witnesses, previously denounced vaccinations in the 1920s. Since the 1990s, they have acknowledged the value of vaccinations and wrote "we have no objections to vaccines in general".

While a minority of Amish parents do not immunise their children, immunisation is not prohibited by Amish religious doctrines.

Judaism

Maimonides, the Jewish rabbi and physician wrote on prevention: "one must avoid those things which have a deleterious effect on the body, and accustom oneself to things which heal and fortify".

Most rabbis advocate for immunisation, arguing that it does not interfere with divine providence. Besides, Judaic theology emphasise community benefits that override individual choices.

The presence of porcine excipients in injectable vaccines is permissible as ruled by multiple Judaic legal authorities. It is still an issue with oral vaccines for those who observe dietary kosher rules.

Bahai Faith, Confucianism, Taoism, Shinto and Sikhism

A recent review document did not identify any canonical doctrine that led to religious objection to vaccines or immune globulins for the Bahai Faith, Confucianism, Taoism, Shinto or Sikhism.

Chapter 3

Sharing Stories and Opinions

Vaccination and The Importance of Valid, Reliable and Accurate Information

Widya Eka Nugraha, Musa Mohd Nordin, Muhamed Iqbal Sarwar

Expectant parents who are looking for information regarding vaccination for their unborn baby will most probably be confronted with diverse opinions on the subject. Invariably, the advice from relatives and friends comes with strong emotional baggage, citing anecdotes or news picked off the internet.

Prospective parents are further confused with the massive information readily available through social media platforms and mobile apps. Thanks to technological advances, information is now easily accessible and available at no charge. This convenience, however, comes at a price, as the same technology is now being used to disseminate lies and inaccuracies, blurring the boundaries of truth and fiction.

There are many elaborate stories based on hearsay, starting with “I know a friend of a friend of a friend whose child had a vaccine and …” types of scenario. Are these personal anecdotes valid and reliable? How does one get a complete story in its full context? How can you separate fact from fiction? How do parents make an informed choice to best protect their children?

If vaccines are truly beneficial, why would there be strong proponents against it worldwide? Why are certain celebrities on television and the social media actively campaigning against vaccination? Surely there is no smoke without fire! Suggestions like these fuel suspicions that vaccines may bring more harm than good.

Not surprisingly, virtually all parents will consult Dr Google for answers. With over 18 million results when you google ‘vaccination’, how can you ensure the validity, reliability and accuracy of the information you encounter? Search engines only identify topics and provide websites that include both good immunisation sites as well as bad sites that spread misinformation.The

majority of sites found on an internet search with the key words 'vaccination' are anti-vaccination sites. The biggest problem about online discussions on vaccine safety is the plethora of false and negative information.

To ensure the online information you are reading is valid, reliable and accurate, you must first ascertain the credibility of the websites. The following are a few tips on how to evaluate the credibility of vaccine or anti-vaccine websites.

1. They should provide scientific evidence for the claims they make. For example, if they allege that vaccines cause autism, they must show facts and figures to substantiate their claims. The website should provide citations of medical articles or scientific studies. It is crucial to distinguish between published and peer-reviewed scientific facts from opinions, unpublished accounts or case reports (see article on Evidence-Based Medicine). It is also important to verify the information published, because many of the anti-vaccine sites frequently misquote data from reliable sources like the CDC (United States Centre for Disease Control and Prevention) or twist statements out of context.

2. The credentials of the experts need to be carefully screened. Vaccinology is a rapidly advancing medical science and not all doctors are specialists in this field. Besides, an expert in one field may not be an expert in another. Thus, a doctor who fails to grasp fully the science of vaccinology may become an anti-vaccine advocate, further confusing readers. Also note whether the published writings had been scientifically reviewed by other experts before being posted.

3. When sourcing accurate and unbiased health information, look very carefully for financial conflicts of interest. If there are advertisements or promotions for a health product, food substitute, health service, or a book, one should be sceptical about the objectivity of the information provided.

4. A credible website posts evidence-based material that cites results from randomised controlled trials and scientific studies. If a website mainly post stories about individual children supposedly "injured or harmed" by vaccines, then it is very likely to be an anti-vaccine website. Be especially wary of blogs of people who are not even medical personnel to begin with.

These criteria would help you sift through the good and bad information about immunisation. For further information, you can get in touch with the US National Network of Immunisation Network (NNII) at http://www.immunizationinfo.org

The War Within

Siti Aisyah Ismail, Norbaizura Saidin

Adam is a healthy and cheerful boy who is brought up with much love and care by his mother. His clothes and beddings are always kept clean. His father also plays with Adam every time he returns from work.

One day, Adam was not his normal self and this worried his mother. After his bath and diaper change, he was rocked to sleep. Adam kept tossing and turning. His sleep was disturbed and he cried inconsolably. His mother was clueless why Adam was behaving differently.

Guys! Let's help Adam's mother find the answers on what is really happening inside Adam's body. Everyone get on board the reconnaissance aircraft Blackbird SR71 Nano. Secure your seatbelts, and off we go!

From the cockpit, we can see that a war is about to explode in Adam's body. Both sides are on red alert to attack the other!

General Virus: "Squad on board. We are going to attack this boy."

Virus squad: "Let's go!"

Immune spy team: "Commander sir! We are being attacked by a team of unknown virus!"

Commander Immuno: "We must respond fast! Report immediately on their numbers and their battle strategy.

A week later…

Immune spy team: "Reporting, Sir! We now have all the information on the virus squad. And we have found the right weapons to defeat them."

Commander Immuno: "Great! Let's make more of the weapons."

While the immune squad was busy producing the weapons, the virus squad was recruiting more soldiers for the battle.

The great battle was fought inside Adam's body. It was a horrible war as the virus squad were in large numbers and the immune squad was caught unprepared. Many from the immune squad died in the battle.

Adam was very sick and had to be hospitalised. The doctor reinforced the immune squad with the antibiotic team. Adam remained ill for quite some time before the immune squad finally defeated the virus squad.

Adam is one-year-old now. He had begun to walk and his parents were very happy with his progress. They ensured he never missed his regular check-ups with the doctor and that his immunisations were up to date.

One night, Adam was unwell again. He was sleeping poorly and kept crying. His parents did everything they could. However, Adam remained irritable.

Let's take another look at what is going on inside Adam's body. This time we're going to use undercover aircraft B2 Stealth Nano. Get ready everyone, blast off!!

General Virus: "Soldiers, today we must redeem ourselves. Let us use a new strategy and a new formation. Prepare for battle!"

Virus squad: "Let's attack!"

Immune spy team: "Reporting, Sir! We are being attacked by the same virus that attacked us the last time."

Commander Immuno: "Do we still have their details in our database?"
Immune spy team: "Yes, Commander! We still have it. Everything is well recorded and we have the weapons used to defeat them before."

Commander Immuno: "Awesome! Let's go get them, troops! Our weapons division has prepared everything!

The battle began yet again. The virus squad was caught by surprise. The immune squad had immediately recognised them, launched their deadly weapons against them and defeated them within a short period. Alhamdulillah, the immune squad won hands down.

What is the difference between the two stories? Both ended victorious for Adam (because I like happy endings).

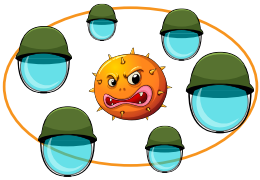
In the first scenario, Adam was unwell for a considerable time before making a full recovery. His immune system was not familiar with the enemy and required some time to recognise it and produce the right weapons (antibodies) to fight the invaders. Adam was lucky to survive the attack. Many succumb to the invasion and die, while others recover but suffer physical or intellectual disabilities.

Vaccines mimics a virus squad attack but in a milder form. So the immune squad of the body is able to quickly recognise the virus squad and form an army (antibodies) to fight the virus squad. When it is attacked again, the body already has a database (memory) of the virus squad and is able to reactivate the immune squad to quickly proliferate its weapons (antibodies) to kill the enemies. The body is able to overwhelm the invader quickly without causing any harm or injury to the body.

How Vaccines Work

A small amount of **antigen** (eg live attenuated bacteria, germs that are dead or inactivated) are injected into the body or given through the mouth or nose.

Our body then responds by producing **memory cells and antibodies**.



Exactly like soldiers, the memory cells and antibodies will **recognise and attack germs** during an infection. This type of immunity is called vaccine acquired immunity.

Illustration courtesy of www.immunise4life.my

Provax Antivax Love Notes

Reflections on the Pro-vaccination and Anti-vaccination Discourse

Widya Eka Nugraha, Diana Katiman

In the recent years, discussions on vaccination by the pro-vax and anti-vax camps have generated much interest. The spectrum of discussions ranged from vaccines being abused as a biological weapon of terrorism to religious nuances, invoking God's laws vis-a-vis immunisations.

Apart from the topics discussed, individuals from various organisations comprising academicians, medical professionals and dubious self-proclaimed experts also coloured the discussions with their thoughts and views.

Beneath the contestations are valuable lessons for us to ponder and reflect. The strong words, blame game and polarised views made the whole conundrum appear like a battle between good and evil, right and wrong, or black and white, when it is most definitely not.

While there are allegations that the anti-vax camp are misinformed and misguided, there are similar accusations that the pro-vax camp are agents of evil conspirators who are going against the *sunnah* (authentic practises) of the Prophet (pbuh). These claims are very much over-generalised, simplications that insult thinking minds.

Should both camps put aside their differences, they will see that their battle is not against each other, but is in fact against a common enemy. The real enemy is the killer and maiming disease, and in this case, an infective and contagious one.

If the anti-vax camp would spend more time thinking "What other methods are there to best beat the disease?" instead of "What other faults can I find in the vaccine?", perhaps the community will benefit more from healthy, thought-provoking and mind-stimulating discussions.

Unfortunately, many anti-vax arguments centre around the flaws and

inadequacies of vaccines, which have been debunked by the science of vaccinology. They would need to do better by forwarding evidence of their plethora of alternative medicines, ranging from homeopathy, naturopathy, herbal medicines, chelation therapy, that are not supported by authentic research and clinical trials.

Let us reflect on the following verse:

يَا أَيُّهَا الَّذِينَ آمَنُوا إِنْ جَاءَكُمْ فَاسِقٌ بِنَبَإٍ فَتَبَيَّنُوا أَنْ تُصِيبُوا
قَوْمًا بِجَهَالَةٍ فَتُصْبِحُوا عَلَىٰ مَا فَعَلْتُمْ نَادِمِينَ

O you who have believed, if there comes to you a disobedient one with information, investigate; lest you harm a people out of ignorance and become, over what you have done, regretful.
Transliteration of the Al-Quran: 49 verse 6

It is easy to disseminate information even for difficult subject matters, and this is often done by those with intent to confuse and influence others. We must always act responsibly, verify all evidence and facts, differentiate them from myths, fiction and lies before sharing them. Otherwise, we will be yet another blind and ignorant person in the cascade of rumour mongering.

It is true that “Muslims are by nature very religious and this religious culture binds them strongly together”. This religiosity needs to be enhanced in directions that will benefit the *ummah*, guided by the *an-nahjus sahih*, the authentic texts of the Quran, *hadiths*, *ijma* (consensus), *qiyas* (deductive anology) and *ijtihad* (sound opinion) of the Muslim scholars. This has been well rationalised and deliberated within the framework of the *Maqasid Shari’ah* and we should measure our thoughts, actions and deeds within this *maqasidic* paradigm.

To judge and condemn immunisation which has been researched diligently by scientists, licensed by health regulatory authorities and approved as *shari’ah* compliant by distinguished Muslim scholars and *majma fiqhi* (jurisprudence councils) is defying the basic qualities of a sincere and pious Muslim.

It is imperative to spare our energy by leaving things to those most qualified and competent who deals with the intricacies of the jurisprudence and science of vaccinology, and frames best practises and general guidelines for us. The ignorant and those with self-interest should not be allowed to be spokespersons for God or Islam, and specialists in all fields ought to be accorded the highest respect and allowed to serve society in the best possible manner, without being denigrated or undermined.

It is far healthier for people to make their contribution in areas that they know best, and allow others to contribute similarly. Let us try to be honest and sincere with ourselves, and trust the experts, both religious and scientists, in this matter. The Prophet (pbuh) was reported to have said:

"He is not one of us who is not kind to children, or does not respect our elders, or denies our learned people the esteem they deserve."
Abu Dawud and al-Tirmidhi

Dear Parents, Please Give Your Children Their Rights

Nurhayati Suwarga, Najaa Miptah

One day, I was asked to assist a homebirth. While preparing at the patient's home, the husband said, "Madam, I'd like to *tahnik* (apply pressed dates to lips) my baby as soon as he is delivered".

I re-confirmed with his wife, "Do you want to *tahnik* first, or initiate the breastfeeding and skin-to-skin contact after the baby is delivered?

"Yes, *tahnik* first, madam. That is the sunnah, *inshallah*," she replied. I agreed to try my best to help with whatever I could.

This is a common request for me. In my career, I have identified three categories of parents. The first refuse *tahnik* and prefers the skin-to-skin contact and immediate initiation of breastfeeding. The second category wants both, where I assist with the skin-to-skin contact, initiate breastfeeding, followed by tahnik. The third category makes the *tahnik* compulsory; not just because it is the sunnah of the Prophet Muhammad but because they believe it acts as a vaccine for the baby's first immunisation.

I am disturbed by the third category of parents because I am unsure of the basis of their convictions. When asked, a few parents claimed that *tahnik* with tamar (dates) is a sunnah because it is nutritious. By giving good food, the child will be healthy, making it similar to immunisation in keeping a child healthy and preventing diseases.

Tahnik, apart from its other attributes, helps to stimulate the muscles of the baby's mouth, which is equivalent to skin-to-skin contact, to foster bonding and initiate breastfeeding. I hope a better understanding of the sunnah of *tahnik* would correct any misconceptions.

In another encounter, I met a couple who came for the antenatal check-up. Apart from the routine physical examination, I discussed other pregnancy and delivery issues. Every time I touched on the topic of immunisation, their

answer remained the same: “No doctor, I’ll not vaccinate my child. It is a Zionist agenda to weaken the Muslims. Every healthy child who comes for vaccination will be unwell after they get vaccinated. It doesn’t make the child healthier!

I tried to allay their anxieties about immunisation, explaining the transient fever and discomfort that sometimes ensue.

“Would you rather risk him having the disease and remaining unwell for the rest of his life? We have eliminated most of these killer diseases. Have you ever seen a patient suffering from diphtheria?” I asked.

“No, madam,” the husband replied.

“Exactly, sir! It is almost ‘gone’ now, thanks to the Ministry of Health’s immunisation programme. But if people now refuse immunisation, the diseases may re-emerge, outbreaks may occur and this will make our children sick. Some may even die! Think of it! It’s the anti-vaccine groups who are making our children sicker and weaker, not the Zionists!”I elaborated.

Despite that, they were resolute, refusing to vaccinate their child and even refusing the medications and vitamins I prescribed. “We take only natural products,” they insisted. To avoid any medico-legal issues, I requested them to sign the form stating that they refused medications and immunisations.

While in medical school in the 1970s, I vividly recall the wise words of one of our consultant surgeons: “Each one of you is a potential parent. Allah will send you children and it is your responsibility to ensure they are fully immunised. It is their right, one that will determine their future. Please educate the society to do the same!”

“Look at me! Don’t let your children be like me, with my many limitations. I cannot blame my parents because I was born in a small village where there was no formal immunisation programme then. If we wanted vaccinations, we had to walk to the city which was very far away,” he used to tell us, limping sadly in front of us with a walking stick that supported his polio-stricken legs.

“During your generation, immunisation is readily accessible, usually for free. Don’t be surprised if your children blame you when they get serious diseases because you chose not to vaccinate them!” he cautioned.

His words left an indelible mark on me. He could not protest nor blame his parents for having to suffer a lifetime due to polio. If only anti-vaccine groups would listen to his story and reconsider their choices.

Dear parents, please give your children their rights, so that you will not be blamed or cursed for your omission and negligence in the future.

I promised myself never to stop educating every parent I meet about the benefits of immunisation and allay their concerns. As a trained midwife, it is my responsibility to help create a healthy and strong generation that will be beneficial to the *Ummah. Inshallah.*

***The writer is a trained community midwife with over 30 years of experience in midwifery and nursing.**

Immunisation Stories from Japan

Lusiana Sofyan, Fariz Nurwidya, Norbaizura Saidin

One of the many allegations of the anti-vaccination group is that vaccination is used to reduce the quality of children in developing countries. Is this true? If so, what about developed countries?

If there is a country whose vaccination policy is as advanced as its economy, it would be Japan. Japan is exemplary in terms of best practises related to immunisation. In terms of vaccine research, Japan was foremost in the discovery and implementation of the chicken pox and acellular pertussis vaccines. A strict distribution of vaccines and its close monitoring ensure that virtually every child in Japan is fully immunised.

As a developed country, Japan requires all children, including foreigners, to be immunised. Some vaccines are mandatory while others are recommended but optional. The mandatory vaccines are provided at no cost to children. The optional vaccines have to be paid by the families.

The epidemiology and burden of each disease dictates whether they are included in Japan's National Immunisation Programme (NIP). For example, vaccination against Japanese B encephalitis is compulsory in Japan and therefore it is provided at no cost. Meanwhile, vaccination for Hepatitis B is not compulsory and therefore it is charged.

The municipal authorities have been proactive in allocating budgets for vaccines. For example, in April 2013, the Hemophilus influenza B vaccination, known as HiB vaccine and Pneumococcal Conjugate Vaccine against invasive pneumococcal disease (IPD, in Japanese 'Hai-en') was declared free of charge. The provision of these additional free vaccines may be linked to the growth of Japan's economy.

Whether the vaccine is free is also subject to the political will of local municipal authorities. For instance, in Tokyo, Arakawa city has made available free PCV and Hib vaccines for quite some time now; while Adachi city has only done so this year.

As a country with four seasons, influenza infections are very common during winter in Japan. Thus, parents are strongly urged to immunise their children with the influenza vaccine during the autumn season as preparation for winter.

Since 2012, Japan has introduced the Injectable Polio Vaccine (IPV) to replace the Oral Polio Vaccine (OPV) used previously. The IPV is often given in combination with the triple antigen DTP-IPV vaccine. This combination quadrivalent vaccine will reduce the number of injections.

What is unique and can only be found in Japan is the BCG vaccine which is delivered as a stamp consisting of 9 small needles. Every baby will be given two stamps, meaning it will be 9x2 pinpricks. The scars are less visible compared to BCG delivered via intra-dermal injections.

How do parents get hold of vaccines? The procedure is relatively simple. All parents are required to register their child at the municipal vaccination office. Next, nurses from the vaccination office will visit the house to reconfirm the address and acquire further information regarding the child's health and previous history of vaccination. If your child is still small, the nurses will also weigh the baby using a portable weighing machine.

Next, a summons letter will be sent to the home with the vaccination information required, in accordance with the child's age. In our case, we received the letter for MR2 vaccination (Measles and Rubella 2nd dose) when our first child was 5 months old. Enclosed in the envelope was a pre-immunisation form, consisting of the parents' consent forms, notes of the child's past and present health, and history of allergies. Next is to make an appointment with the family medicine doctor for the vaccination.

On the day of vaccination, we just need to bring along the medical card and maternal and child health book. Vaccination time is made enjoyable for children especially toddlers as they can play with the many toys available. The doctor's table is well equipped with playful toys and colourful band aids of famous cartoon characters and candies which the children can choose from. Perhaps this is why our daughter is so eager to go for vaccinations or visit her doctor.

The price for non-compulsory vaccines is not expensive. For a family in Tokyo with an income of 300,000 yen, the price of 3500 yen for the Hepatitis B vaccine is considered quite cheap. Undoubtedly, the Japanese government puts a premium on child health and invests wisely in its immunisation policy to protect its children from killer and disabling vaccine-preventable diseases.

***The writer is the head of FAHIMA (Forum Silaturahim Muslimah) in Japan and currently lives in Tokyo to accompany her post-graduate student husband.**

Is Refusing Immunisation Your Human Right?

Siti Aisyah Ismail, Zulkifli Ismail

"I want to do the Hajj or Umrah and I do not want to have the meningitis vaccination. That is my right as an individual, isn't it?"

"My children are healthy, why should we immunise them? It is our right to protect them from toxic injections!"

The issue of immunisation does not only involve your child or mine. It is not about the rights of individuals. It involves our children and all the children in the world.

Parents who refuse immunisation do not realise that it involves the whole community, extending beyond their immediate and extended families. Many think that it just involves their own children, making them satisfied that their children are healthy. They do not realise that it takes only one person to be infected or be a carrier for a vaccine-preventable disease to spread.

Lately, more parents are refusing vaccination, influenced by the 'conspiracy theory' propagated by those who are anti-vaccine. To them, everything about immunisation is a conspiracy; from the government, health workers, the Israelis, to make our children sterile, weak and unhealthy. These ridiculous theories and accusations will endanger the whole population when more people start believing in concocted views and opinions.

The most popular of these is that vaccines cause autism. Unfortunately, the people with the loudest voices are parents of autistic children. If this is so, why are not all vaccinated children suffering from autism? Why is there only a small number of 'susceptible children' who end up with autism, purportedly caused by the vaccine?

The reality is that the original author of the paper who linked vaccination with autism was dishonest, callous and unethical. He was barred by the General Medical Council UK, ten of the original authors withdrew from the

publication and the medical journal retracted his paper. His allegations of the link between MMR and autism has since been debunked by many scientific studies.This is reinforced by many population and epidemiological studies all over the world that proved no causal association between immunisation and an increase in autism over the previous decade.

It is probably easier to blame health workers, the pharmaceutical industry and the vaccine than attribute autism to genetic predisposition. That is life; we cannot choose the genes we are born with, just as we cannot choose who our parents are, and how these genes interpret the codes that determine our looks and physical shape.

There are also Muslims who allege that vaccination is against the teachings of the Prophet Muhammad (pbuh) claiming that if it was allowable, the Prophet (pbuh) would have done it during his time. We forget that Islam is a pragmatic religion that teaches followers to learn, observe, think and analyse, thus making the religion relevant and valid till eternity.

This had driven Islam to success, with discoveries and inventions at a time when Europe was enshrouded in the dark ages that prevented new thinking. The Prophet (pbuh) and his companions encouraged the consumption of honey, olive oil, black seed (habattussauda') etc, which has since been shown to strengthen the immune system. The protection conferred by these healthy foods is generic and not specific against infectious diseases.

As such, the basic principle is to encourage believers to research, investigate and create modalities that would protect us against communicable diseases. Immunisation has been scientifically proven to be one such health intervention against infectious diseases and cancers.

The conspiracy theories involving vaccination are nothing more than opinions stated by individuals opposed to immunisation to instill doubt and fear among parents. They have no scientific studies or insufficient data to substantiate their claims.

Vaccines have been proven to provide protection against at least 30 types of diseases. It protects against crippling and fatal diseases like polio, tuberculosis (TB), diphtheria, whooping cough, tetanus or 'lockjaw', meningitis and other diseases that used to kill or maim millions of children worldwide.

The beauty of immunisation is that the vaccines do not just protect vaccinated children but also unvaccinated babies. Babies who are too young to be vaccinated depend on the immunity of his or her caregivers (parents, siblings, relatives, visitors, healthcare workers) to stay healthy until they reach the age for vaccination.

Leaving your baby next to an unvaccinated child who is sick with a vaccine-preventable disease (like measles or whooping cough) is unthinkable. Once a child is vaccinated, this chain of transmission is broken. By vaccinating your child, you have protected your child and the whole community by preventing the disease from spreading.

If you decide not to vaccinate your child, you must allow other parents to prevent their children from being exposed to your child and to distance themselves from your family. This is their right too! Other parents must be informed that your child is not vaccine-protected and they have the right not to send their children to the same kindergarten or school to prevent them from being potentially infected.

By not vaccinating your child, you have chosen to take a risk. At least help other parents by not exposing their children to the same risk that you are taking with your child. Not doing so would be selfish. This is similar to smoking. If you wish to smoke, do so away from others who do not want to share the secondary smoke and risk getting cancer or heart disease.

Once upon a time, the influenza or flu epidemic (1918) and measles outbreaks killed massive numbers of individuals. Polio used to maim and kill thousands more. Do you really want to go back to that era? It can happen if there are large enough unvaccinated people acting as carriers.

So please do not say that refusing vaccination is your right. It is also my right to convince and educate you and others about the importance of immunisation for the health and life of my children, our children. My children also have the right to play without fear of catching a preventable infection from friends whose parents believe everything they read on the internet.

Freedom of choice is a good thing. But the freedom to harm others is not.

There is a responsibility to protect the weak, those more susceptible among us –ill babies, those with immune deficiencies, the aged. These are the susceptible populations if and when more people refuse vaccination. Your freedom is bound by the freedom of others; we live in a community and the safety of the community should override personal freedom.

One Death Too Many

Chan Li Jin @ Ahaddhaniah

As a health journalist, I spent a lot of time in hospitals over the last 15 years. While waiting to interview doctors, I inadvertently ended up chatting to patients and listening to problems they would not tell their doctors such as family squabbles, financial constraints, demanding bosses or unhelpful colleagues.

The most heart-rending stories usually came from the Paediatric Unit, where anxious, sleep-deprived parents cuddle their ill children or pacify crying babies. Every parent's tale is a sobering reminder of the importance of disease prevention.

Having one sick child takes a toll on the entire family, more so for chronic, incurable diseases. I often wonder who suffers more – the sick child who would miss out on the fun and play of childhood, or the parent who has to commit to a lifetime of care for the child. The family dynamics is severely disrupted, leading to family conflicts and dysfunctional behaviours in other siblings or among spouses. Healthy children feel neglected and left out, while the sick child feels guilty and depressed for being the family's source of misery.

The first time I heard of pneumococcal disease was at a press conference in 2005 when the vaccine (PCV7) arrived on Malaysian shores. Even to a seasoned journalist, the revelation that there was a disease that could cause such rapid death and disability was shocking. That the disease could now be prevented with a vaccine was such welcome news.

Over the next decade, however, we continued to hear news of children being infected with pneumococcal disease despite periodic reports on it in the media. What exactly was happening on the ground – were people not reading? That was when a group of us decided to do a community survey, just to assess the level of awareness.

Over 500 people were asked a list of questions, including whether they had heard of pneumococcal disease and whether they knew a vaccine

was available for it. The results provided us invaluable insights: 60% of the population had not heard of the disease and were unaware of its prevention. The majority of parents felt that the vaccine was costly, more so for families in the medium to lower-income brackets.

That gave rise to the YES to PnD Protection campaign in 2013. Partnering Malaysian Paediatric Association (MPA), the Asian Strategic Alliance for Pneumococcal Disease Prevention (ASAP) and later the Confederation of Meningitis Organisations(COMO) the following year, we dived into a heated process of collecting public petitions to support the call to have the pneumococcal vaccine included into the country's National Immunisation Programme (NIP).

My premise was simple: life is complicated enough for parents, why make it more so with preventable sickness or premature death?

When the issue was raised to the government, the reply was there was 'only' 8 deaths out of 1000 children (totalling 71 deaths) a year, which does not meet the World Health Organisation's recommendation of including the vaccine in the NIP when there are 50 deaths out of 1000. What more, the deaths were only from cases of pneumococcal pneumonia. There was no data for deaths caused by pneumococcal meningitis or bacteriacemia.

My heart went out to Erina, who lost her 14-month-old son to pneumococcal pneumonia in 2013. A self-professed obsessive mother, she had fully breastfed her baby, abided by all his compulsory vaccinations and kept away from high-traffic places during his first year. When he seemed unwell, she had brought him to a paediatrician for 3 consecutive days, only to be referred to the general hospital on the fourth day. By day five, she was told her baby had only 2% chance of survival. He passed away the following day.

There was also Siti, a nurse at a private hospital whose baby girl was similarly infected. As she prepared to enter the Operating Theatre where her daughter would be operated on to remove the copious amounts of pus from her lungs, the surgeon stopped her, saying, "Wait outside. Today, you're a mom, not a nurse." The following month was a nightmare as her daughter perched between life and death in the ICU. Thankfully, her daughter survived, but not without a string of emotional and mental scars for the family.

There were others who didn't even make it into the national statistics. Mrisha, who lost her 5-month-old to pneumococcal meningitis in 2004, still remembers the last moments of her baby's life 'because everything happened so fast'. Ten years have passed and she still cannot bear to give or throw away her daughter's belongings. Any mention of her late baby turns her into an emotional wreck inside despite her calm composure.

Another child who wasn't a statistic was Zura's son, who caught pneumococcal meningitis when he was 11-months old. Although he survived, he is now displaying slow speech development at the age of five, realising her fears that he might develop abnormal signs later in life after battling for his life in the ICU for a week.

There was also Liyana, a nurse from a government hospital, who shared a new perspective with us. Although they did not have to pay for her son who was in ICU for 6 weeks after catching pneumococcal pneumonia, the transportation costs from her rural hospital to a larger one in another town with NICU services cost her half a month's salary. Their financial difficulties were compounded when her self-employed husband had to stop work for a month to help care for the other two children.

Parent testimonials may not be scientifically acceptable and may appear as 'scare tactics' to some people. But the truth is you will know true fear only when your precious child is ill, more so in a life or death situation.

Simply put, every death from a vaccine-preventable disease is one death too many. Beyond the statistics are living, breathing families with their own set of problems. We cannot solve everyone one's problems, but we can give them one less problem to worry about: catching a life-threatening vaccine-preventable disease.

In the last three years, the YES to Pneumococcal Protection campaign conducted health talks, vaccine donation programmes, meetings with policy makers, media conferences, even a public petition which collected over 20,000 pledge cards from the public.

While awareness levels have increased, the problem of the vaccine being too costly for a large majority of the population remains a problem. Getting the vaccine into the National Immunisation Programme will make it available for free among the masses at government mother and baby clinics, while prices will also go down at private hospitals or clinics.

Meanwhile, children continue to be hospitalised and lose their lives to this vaccine-preventable disease. The campaign will continue urging the government to make healthcare a priority, starting with pneumococcal disease for which prevention is available. It is our duty to speak up for children, to be their voices, because they do not know any better.

Being a Lucky Woman

Dyah Mustikaning Pitha Prawesti, Siti Aisyah Ismail

Jakarta, Indonesia
November 2006

That early Sunday morning, I arrived at the oncology ward almost at the same time with the security team who were changing duties. It was a bit late compared to the Sunday working hours though. I was hoping to finish my ward rounds and other tasks early so that I would have some time with my children in the evening.

I had just placed my bag on the desk when a middle-aged man approached the nurse station. “Excuse me, are you the doctor-in-charge this morning?” he asked politely.

“Yes,” I said, smiling. “I don’t think we’ve met before. Whose family are you?” I knew every single patient in this ward well, including their families, as I had spent almost a month being in charge of that ward.

“No, we haven’t met. My wife was just admitted last night. She is in Bay 3 Bed B. About three months ago she was admitted here as well, but we didn’t meet you either, Doctor,” he explained.

“I see. I’ve only been here for one month. What can I do for you?” I asked, while taking patient notes from the shelf.

This ward has five bays, with six beds each. Two chemotherapy bays nearby is always full as well. Doing ward rounds for these patients with complex gynaecological malignancy involving other departments normally takes a whole day, including weekends.

“It’s about my wife, Doctor. She has just been reviewed in the outpatient clinic on Friday, and we were informed that she is having her surgery on Monday. But a nurse told me that she has poor kidney function, and her surgery might need to be cancelled. Please help us, Doctor. If it is cancelled, it would be very difficult for us to get the Jamkesmas* again…” he lamented.

“Give me a few seconds to go through her notes, please. I haven’t met her before,” I answered, scanning her notes quickly.

His wife, a 31-year-old lady with one child, had her first assessment in the oncology outpatient clinic about 3 months ago. She came with a history of continuous vaginal bleeding. During examination, she was found to have a cervical mass and it was biopsied. It was clinically staged as IB cervical cancer and was advised to undergo surgery, radical hysterectomy and with both ovaries conserved as she was still young.

Unfortunately, she did not follow up. I checked on the histopathology result, which showed clear cell carcinoma, a rare type of cervical cancer with very poor prognosis.

“Has she done any cervical smear in the past, Sir?” I asked.

“What is that, Doctor?” his face showed he was clueless.

“It’s a screening test for malignancy of the neck of the womb,” I tried to explain.

“I don’t think so, Doctor. My wife used to be very fit and well. She hardly ever sees a doctor. When she had her baby, it was only a paraji** who assisted her,” he said.

I was not surprised, because only a small proportion of the 230 million Indonesians know about the cervical smear test and why it needs to be done routinely. In fact, cervical cancer is the number one killer of Indonesian women in terms of gynaecological malignancy.

“Why was the surgery three months ago cancelled, Sir?” I was curious as the reason was not stated in the notes.

He answered quietly, “I had financial difficulties at that time, Doctor. My parents-in-law would only help me if I brought her back to her village in Jawa for traditional alternative treatment. I had no choice but to follow my in-law’s wishes. She spent three months there with a traditional medicine practitioner. We spent almost 20 million rupiahs, but she got worse. She became thinner, pale, and was always in pain. Eventually I decided to sell my only sheep and return to Jakarta. I managed to get the Jamkesmas for her and got her to this hospital so that she can be treated. Please help her, Doctor. Please don’t cancel her surgery. If she can’t have her surgery now, I probably won’t get another Jamkesmas next time…,” he begged.

I nodded empathically. When I viewed her consultation on Friday, I could not believe my eyes. My colleague had examined and diagnosed her as

cervical cancer stage IIIB with involvement of the parametrium. Parametrium is an area around the cervix, and several important organs intersect this area including the ureters, which connect the kidneys to the bladder. Parametrial involvement can cause ureteral blockage and obstruct the outflow of urine from the kidneys to the bladder. Toxins which are normally cleared by the kidneys would thus accumulate in her body and cause damage to her tissues.

It is common for the poor to resort to alternative medicine because medical treatment is too expensive. This unlucky patient has clear cell carcinoma, which spreads very quickly and has a poor prognosis. Within 3 months, the operable stage IB with almost 95% of 5 years survival rate, had progressed to an inoperable stage IIIB with only less than 40% of 5 years survival rate. Not to mention the other complications that she now has. She was initially scheduled for radiotherapy prior to ovarian conservation surgery to reduce further complications.

Upon examination, she looked very weak and pale. She could not pass urine for several days. The urinary catheter only drained minimal red coloured fluid. Her kidney function test showed very high levels of urea and creatinine. Ideally, haemodyalisis or nephrostomy (direct drainage via a tube in the pelvis of the kidney) should be done urgently. Unfortunately, we were unable to secure a slot for her as the hospital was highly occupied.

“So, how is it, Doctor? My wife is still having her surgery tomorrow, isn’t she? She should be cured after the surgery and can be home soon, right?” he asked hopefully.

I tried explaining to him that her cervical cancer had spread to her bladder. No amount of surgery or medicines could cure her. Instead we should focus on improving her quality of life by keeping her pain-free and comfortable. As a medical doctor, I was not ashamed to admit my limitations, unlike alternative medicine practitioners who often claimed they could cure every disease.

I was not sure how much the husband understood my explanation. But his sad tone and wet eyes convinced me that he knew her condition was severe.

“Can I spend the night here with her, Doctor? At least when she is in pain, I can hold her hands…” he asked quietly.

“Most certainly, I will prescribe some medicines to relieve her pain.…”
I said.

Watford, United Kingdom
April 2014

This contrasts with my experience while working in the National Health Service (NHS) UK. A lady whom I saw in clinic had a history of cervical pre-cancer lesion. This was detected on a Pap smear, which is done every three years for women aged 25-65 years.

An automatic recall would be generated when a lady is due for her test. Unfortunately, this is not the case in developing countries where few women actually do their Pap smears. Thus, they often present late when their cervical cancers are at an advanced stage.

The gynaecologist excised the abnormal pre-cancerous part of her cervix. One drawback of the surgery was that the neck of her womb is weaker (cervical incompetence). Her first baby was delivered prematurely and had required care in a Neonatal Intensive Care Unit. But the surgery prevented the progression of her cancer and she is now back to normal health. She reflected:

"I was very traumatised with my previous pregnancy. My baby spent several weeks of his early life in the incubator with all those tubes, drips, and injections. Thank God he is healthy now. But I wouldn't go through that experience again, ever..."

"You know what, Doctor, I wish they found the cervical cancer vaccine when I was younger so I could get one. The girls who got this vaccine nowadays are very lucky, they won't go through what I've been through..."

I guess being lucky is relative as it depends on where you are and when. My first patient who suffered from stage IV cervical cancer would think that women who have early screenings were lucky as the disease can be detected early and be cured.

However, my patient who had the procedure done to her cervix felt that girls who now have the opportunity to be vaccinated for HPV infection are even luckier as they don't even need to worry about the infection and the horrors of the disease when it can be prevented altogether.

Glossary
***Jamkesmas: Government healthcare subsidy**
****Paraji: Traditional untrained midwife**

Answering Your Confusions and Fears

Zahilah Filzah Zulkifli

I reckon some of you may have your own stand on this matter - vaccination. While some of you may disagree, I believe the majority of us still believe in vaccination as an effective preventive measure to combat certain infectious diseases. However, someone may have spoken to you or you may have read on Facebook recently that vaccination is not what it seemed. That it is unsafe, causes autism, is not halal and that they only drive profits for certain parties.

So you googled it. There were many articles on the pros of immunisation but there were equally a lot on the cons. After reading about the disadvantages of vaccination, everything seems to weigh down on you. You can't help but wonder if they were somewhat true.

I believe that most misconceptions and controversies regarding vaccination stem from the fact that people underestimate the disease, yet overestimate the side effects. While I agree that Adverse Event Following Immunisation (AEFI) do sometimes occur, most are mild (e.g. fever and soreness) and disappear rather quickly. Mothers who have vaccinated their children before will attest to that.

Conversely, I believe not many have seen the diseases at their worst. Measles, for example, may just be fever and red spots to most, but are you aware that it can spread to the brain and cause death? Pertussis, too, may begin with the usual fever and cough, but babies who progress to the second stage of the disease may have prolonged cough, turn blue and stop breathing.

Polio was almost eradicated at one point but is now sadly on the rise in certain third world countries where vaccination rates are low. Meningitis, or inflammation of the brain lining caused by Haemophilus Influenza, may render a child debilitated and even cause death.

Whether you like it or not, the truth is vaccination has tremendously reduced

the burden of infectious diseases and prevented millions of child deaths around the world.

Let's discuss a little about the history of vaccines and how they work before discussing the issues. We will only be able to appreciate what we have today if we knew how it all began.

Have you ever heard of smallpox before? Some of you may not because the disease is no longer around. But did you know that the deadly disease was one of the most devastating diseases in the history of mankind, and has killed more than 500 million people for centuries? 500 million! Thanks to Edward Jenner, whose work contributed to the development of vaccines, smallpox was eradicated and we don't have to see loved ones dying from the disease.

How do vaccines work? A child who develops chicken pox, for example, will rarely contract the disease again. This is because the immune system has 'memory', so the next time the child is exposed to the virus, the body remembers and destroys the virus before it causes sickness.

Vaccines work the same way, only artificially. Vaccines contain weakened or killed form of the germs that trigger an immune response without causing the disease when introduced into the body. The next time the child is exposed to the virus or bacteria, their antibodies would be able to recognise and combat it.

3 years ago, a child was admitted to my place of practice for lung infection. Upon asking the immunisation history, we found out that the child was not vaccinated. In fact, none of his siblings were. I started counselling the parents but was quickly dismissed. They felt strongly against vaccination and did not want to discuss any further, saying that their other children were perfectly healthy despite being unvaccinated. I wanted to tell them about 'herd immunity' but dropped the idea.

What is 'herd immunity'? Also termed 'community' immunity, it occurs when the majority of the population is vaccinated. The immunity achieved by the community would be able to protect those who cannot be vaccinated (due to medical reasons, HIV, immunosuppression).

This has not been sufficiently emphasised - when you get your child vaccinated, you not only protect your child from infectious diseases but also other unfortunate children with low immunity who cannot be vaccinated. I can't stress this enough - you are doing a good deed if you get your child vaccinated. But when the rate of vaccination falls, the herd immunity is lost, and I guess you can figure out what comes next.

Having understood the basics, let's move on to one of the most common misconceptions about vaccination. Do the MMR vaccines cause autism? The answer is no.

The scare started in 1998, when a medical journal, The Lancet, published a study by Mr. Andrew Wakefield, MD (previously held the title Dr) stating that the combined MMR vaccine was linked to autism. Not long after, The Lancet withdrew the article and Wakefield lost his medical licence. Investigations proved that Wakefield's research was fraudulent, unfounded and biased and that there were conflicts of interest. His article led to a drop in vaccination rates in the United Kingdom and worldwide.

Since then, many studies were done to assess whether there was any association between the MMR and autism, but none were found. Sadly, even after two decades, some people still believe that it does. Sigh…

The other concern is regarding the use of Thimerosal in vaccines. Thimerosal is a mercury-based preservative that helps prevent bacterial growth in vaccines and helps maintain the vaccines' efficacy. Thimerosal contains ethyl mercury, which is eliminated from the body quickly and does not reach toxic levels in the blood like methyl mercury. The level of Thimerosal in vaccines are so small that even fish contains more of it. The amount of Thimerosal in vaccines have not been shown to cause harm or a health risks.

Vaccines are not halal? It would be unfair to say that those who vaccinate their children do not care of halal and haram. The Malaysian Immunisation Programme is decreed permissible by JAKIM. In fact, a prominent Islamic Scholar, Sheikh Yusuf Al-Qaradawi, stated that the lawfulness of vaccination in Islamic perspective is as clear as sunlight.

It is the duty of every Muslim to ward off harm as much as possible. While we all believe in natural ways to boost immunity eg breastfeeding, taking honey (not for those below 1 year), Habatussauda' or olive oil, Muslims should not deny ourselves of modern medicine that has withstood the test of time. I have always believed in complementary medicine.

I am not sure if I have covered all your concerns but I hope this helps. You may or may not be convinced and that's okay, as I believe conviction needs to come from yourself. If you are doubtful, read further from reliable sources, discuss with people who know best and perform *Istikharah*.

If you strongly object vaccination, my only request is that you do not impose your views on others. I am writing this merely for those with concerns and doubts, yet has not dismissed vaccination.

We need to tackle these issues at national level. It is the responsibility of the Ministry of Health to allay parental concerns regarding vaccination. The community needs to be educated. Myths and misconceptions regarding vaccination should not be allowed to spread, or we will suffer the consequences in the future.

Lessons Behind The Controversies

Widya Eka Nugraha, Muhammad Fauzi Abdul Rani

It was November 2011. I was still working as a GP that I first came across an anti-vaccination movement via a Facebook comment from a friend, “baby dies after vaccination”. The comment attracted hundreds of responses.

How does one become an anti-vaxer?

From my own reading and observation, there are many reasons but some become anti-vaxer without any specific reasons except for their own personal gain. Here are some examples:

Bad personal experience

Medical treatment or intervention is never free of complications or side effects. Some do occur even with the best care and caution. My friend who developed a reaction to vaccination was not satisfied with the medical personnel’s explanation, so she joined the anti-vaxer movement instead. You may also have heard of a celebrity who became an anti-vaxer after his own bad experience following meningococcal vaccination.

The truth is, bad personal experience is very subjective and depends on the mental and intellectual state of an individual. For example, a normal reaction following vaccination could turn into a personal nightmare if the individual has had a negative pre-fixed idea about vaccination. Instead if he/she opted to think rationally, he/she would first seek medical consultation on side effects before jumping to irrational conclusions. Therefore, bad personal experience could just be an excessive personal (mental and intellectual) response to an expected side effect following vaccination.

My vaccinated son seems different

Anti-vaxers often moan, “I observed my vaccinated child, and he seems different from others. He is always unwell compared to the others who are unvaccinated.”

This sounds familiar but this kind of observation is inherently biased and unscientific. A mother is usually better at looking after subsequent children

because of increased experience, confidence and learning. Therefore, her assessment may be clouded. The statement is also based on recall which is often vague, depending on memory and prefixed notions about the subject. Such common but vague statements therefore should not be too difficult to be politely rebutted by those who support vaccination.

Peer influence

This is probably the strongest factor that influences a person to become an anti-vaxer, either through contact and influence in the real or virtual world. The anti-vaccination movement is a strong and tightly knit community, and they are constantly supporting one other, hence we need a strong pro-vaccination movement too.

As Muslims, let us move beyond the debate 'for and against' vaccination, and focus on really important issues underlining the controversy. There are three fundamental issues; good manners, a right thinking mind and care for our community. Understanding and resolving these three issues may help solve the controversy itself and make us a more cohesive unit within the *ummah* (community).

Good manners

Good manners are the foundation of Islam. One requirement, among others, is that we must always exercise *tabbayyun* (meticulous scrutiny) when dealing with news, arguments, or opinions to differentiate between fact and fiction.

يَا أَيُّهَا الَّذِينَ آمَنُوا إِن جَاءَكُمْ فَاسِقٌ بِنَبَإٍ فَتَبَيَّنُوا أَن تُصِيبُوا قَوْمًا بِجَهَالَةٍ فَتُصْبِحُوا عَلَىٰ مَا فَعَلْتُمْ نَادِمِينَ

"O you who believe, if there comes to you a disobedient one with information, investigate, lest you harm a people out of ignorance and become, over what you have done, regretful."
Al-Ĥujurāt: 6

Tabayyun is an essential part of good manners as it avoids unnecessary argument and debate that may wedge relationships and friendship among Muslims. The practice avoids falsehood and hearsay as sources of knowledge that often cause mistrust and destroys the foundation of *ukhuwwah* (brotherhood) in our community. Let us reflect on this verse:

وَمَا أَرْسَلْنَا مِنْ قَبْلِكَ إِلَّا رِجَالًا نُوحِي إِلَيْهِمْ ۚ فَاسْأَلُوا أَهْلَ الذِّكْرِ إِنْ كُنْتُمْ لَا تَعْلَمُونَ

"And We sent not before you except men to whom We revealed [Our message]. So ask the people of the message if you do not know."
An Nahl: 43

On the issue of vaccination, the experts or the people who know are the vaccinologists and immunologists among the medical profession. Therefore it is incumbent upon Muslims to sensibly seek the opinions of these experts if they wish to understand the benefits and risks of vaccination.

Unfortunately, a few doctors or health care professionals have become anti-vaxers, misguided and misinformed by pseudo-science or dubious scientific evidence that mislead and fabricate rather than guide the public on the best available evidence. They should be considered as bringing the medical profession into disrepute as they bring scepticism to the noble and honest work of the medical profession.

يَا قَوْمِ لا أَسْأَلُكُمْ عَلَيْهِ أَجْراً إِنْ أَجْرِيَ إِلاَّ عَلَى الَّذِي فَطَرَنِي أَفَلاَ تَعْقِلُونَ

"O my people, I do not ask you for it any reward. My reward is only from the one who created me. Then will you not reason?"
Hud:51

As Muslims, it is imperative that we base our reasons and arguments on facts derived from well-designed studies. Failure to do so will cause injustice to the people that we serve or communicate the knowledge to. It is unbecoming of Muslims to be entirely convinced on arguments founded on hearsay or pseudo-science. A person who speaks or spreads ideas and opinions based on conjectures will cause dissent and mistrust in the community.

There is however a group of people who in fact pay no attention whatsoever to any sound arguments either for or against vaccination, because they are motivated entirely by money. They become anti-vaxers to gain financially from the controversy, for instance through the pay-per-click feature on the internet that snares unsuspecting readers to the debate.

Others, on the other hand, are bent on fuelling the controversy because they sadly derive satisfaction from the confusion. These heinous people even resort to creating fake testimonials and attribute unsuspecting public figures to the anti-vaccination movement.

Why has this debate become so intense and controversial?

Firstly, the government of the day needs to be kept abreast of the debate because it is their duty to keep the population healthy. They want to ensure that the National Vaccination Programme is comprehensive in its coverage and successful in implementation. There is therefore a tremendous amount at stake for the government, thus the intense debate and interest.

Secondly, it is human nature to blame anything that one does not know.

When they fail to understand a misgiving, they need to find something to be blamed. Vaccination is universal and very successful, therefore it is an easy target, for instance, for the rise in autism.

Thirdly, it boils down to money and greed. The controversy feeds interest in products that falsely claim to be the panacea to alleviate symptoms, cure side effects or ailments seemingly attributed to vaccination. The deeper the controversy, the greater the interest in the remedy, and therefore the more business it can generate for those with vested interests.

إِذْ تَلَقَّوْنَهُ بِأَلْسِنَتِكُمْ وَتَقُولُونَ بِأَفْوَاهِكُم مَّا لَيْسَ لَكُم بِهِ عِلْمٌ وَتَحْسَبُونَهُ هَيِّنًا وَهُوَ عِندَ اللَّـهِ عَظِيمٌ

When you received it with your tongues and said with your mouths that of which you had no knowledge and thought it was insignificant while it was, in the sight of Allah, tremendous.
An Nuur: 15

Spreading lies and fabrication is *ghibah* (backbiting) or even *fitnah* (false accusation). Some anti-vaxers have gone to the extent of proclaiming that the vaccination for Haj or Umra pilgrims is a conspiracy between the wicked Saudi government and pharmaceutical companies, and the vaccine's halal certificate is a forgery involving the scholars in the scandal. What a *fitnah*! This is indeed a great *fitnah* spread among Muslims to cause dissent and schisms within us.

وَاقْتُلُوهُمْ حَيْثُ ثَقِفْتُمُوهُمْ وَأَخْرِجُوهُمْ مِنْ حَيْثُ أَخْرَجُوكُمْ ۚ وَالْفِتْنَةُ أَشَدُّ مِنَ الْقَتْلِ ۚ

And kill them wherever you overtake them and expel them from wherever they have expelled you, and fitnah is worse than killing.
Al Baqarah: 191

A right thinking mind

A right thinking mind is a thinking process based on logic, evidence and sound academic reasoning. It is able to distinguish between hearsay or fabrications and facts or truth. This is the basis of scientific knowledge, where the thought process is logical and academic, serving as the foundation for human understanding and knowledge advancement of science. The branch of science related to vaccination is called immunology and vaccinology.

اللَّهُ الَّذِي خَلَقَ سَبْعَ سَمَاوَاتٍ وَمِنَ الْأَرْضِ مِثْلَهُنَّ يَتَنَزَّلُ الْأَمْرُ بَيْنَهُنَّ لِتَعْلَمُوا أَنَّ اللَّهَ عَلَىٰ كُلِّ شَيْءٍ قَدِيرٌ وَأَنَّ اللَّهَ قَدْ أَحَاطَ بِكُلِّ شَيْءٍ عِلْمًا

It is Allah who has created seven heavens and of the earth, the likes of them. [His] command descends among them so you may know that Allah is over all things competent and

that Allah has encompassed all things in knowledge.
At Thalaq: 12

It is unbecoming of a Muslim to reject immunology, as it is the basis of science that underpins the practice and knowledge of immunisation or vaccination. It will be illogical to forsake the hundreds of years of research that had yielded good scientific data on the safety and benefits of immunisation, and rely instead on anti-vaccination arguments based on quack science, concoctions and hearsay.

This tradition of scientific knowledge follows similar traditions in the Islamic methodology of knowledge where arguments and reasoning must be based on the authenticity of sources. In the sciences of the Ahadeeth, for example, we have the hierarchy of knowledge in Ahadeeth; shahih(very good), hassan (good), dhaif (weak) or maudhu (false). The latter two are rejected as the basis of an edict or law.

In science, knowledge is built on well-conducted studies. The findings are submitted for publication in peer reviewed journals to allow greater scientific scrutiny and critique, either by repeating the study or designing another study to ascertain other or similar possibilities or outcomes. Such rigorous scientific exercise and debate pave the way for the establishment of the most reliable and valid scientific knowledge as the basis of clinical practice on patients.

This is the basis for the origin of immunisation, rigorous scientific tradition and research. Even when a practice is considered established on good scientific facts, it is still open to criticism and debate for doctors and the scientific community to improve the practice and avoid any harm or minimise potential risks. This practice ensures the safety of any medical treatment or intervention given to patients.

It is true that vaccination has side effects. This fact was never hidden from the public -potential risks and side effects are clearly explained to the public. The medical community is always looking for ways to minimise side effects in the future. These minor side effects and risks should not be the basis to reject vaccination, as the potential benefits have been monumental and historic compared to side effects.

Care of our community

Muslims should concentrate on matters that help and strengthen the *ummah* rather than become embroiled in controversies surrounding immunisation.

"There will be a palace in the heaven for those who shun away from needless debate even though

they are entitled (because of their knowledge) to it."
Narrated by Abu Daud, confirmed to be Sahih by Al- Bani

What if the person has no knowledge of a matter and shuns away from the debate surrounding it? That will be a more desirable and honourable action to the community because it avoids discord and disharmony.

وَإِذَا سَمِعُوا اللَّغْوَ أَعْرَضُوا عَنْهُ وَقَالُوا لَنَا أَعْمَالُنَا وَلَكُمْ
أَعْمَالُكُمْ سَلَامٌ عَلَيْكُمْ لَا نَبْتَغِي الْجَاهِلِينَ

And when they hear ill speech, they turn away from it and say,
"For us are our deeds, and for you are your deeds.
Peace will be upon you; we seek not the ignorant.
Al Qasas: 55

This verse has clearly elucidated that the right and proper way is to shun debate or discourse that we have no knowledge of.

خُذِ ٱلْعَفْوَ وَأْمُرْ بِٱلْعُرْفِ وَأَعْرِضْ عَنِ ٱلْجَٰهِلِينَ

"Take what is given freely, enjoin what is good,
and turn away from the ignorant."
Al A'raaf: 199

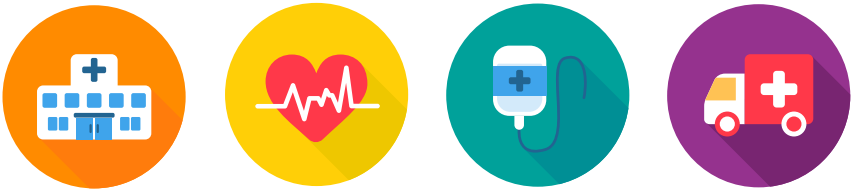
Indeed, shunning away from any discourse that can lead to discord and disharmony in the *ummah* is mandatory, even more so for those who partake in it without any sound and reliable knowledge. Anti-vaxers are clearly in this category.

"Whosoever among you who believe in Allah and His Last Day,
he should only say good or stay silent"
Narrated by Al Bukhari and Muslim

There is no reason therefore we should dwell on this needless debate. Instead we must allow the experts and scholars to rightfully study the subject and their conclusion should be adequate as the basis of our knowledge and practice on vaccination.

Chapter 4

Frequently Asked Questions



About Immunity

Nor Baizura Saidih, Siti Aisyah Ismail, Chan Li Jin @ Ahaddhaniah, Musa Mohd Nordin

About Immunity

1. What is immunisation?

Immunisation is an effort to protect us from dangerous diseases and serious infections eg diphtheria, tetanus, polio, whooping cough and measles. Immunisation uses the body's natural defense mechanisms, namely the immune response, to form specific antibodies against infection and develop memory against future infections.

2. What is the difference between vaccination and immunisation?

Vaccination means getting an injection of a dose of a particular vaccine, while immunisation means getting injections of the vaccine and developing immunity against it. The terms vaccination and immunisation are often used interchangeably.

3. How does immunisation work?

Upon vaccination, the body produces an immune response in the same way when it is exposed to the disease, but without getting the symptoms of the disease. It also develops a memory against future infections.

4. What about natural immunity?

Upon infection with a germ, the body exhibits signs and symptoms of the disease eg fever, rash, feeling unwell for several days. The body's immune system develops antibodies and memory cells to protect against future infections of the same germ. This is called natural immunity.

Acquired immunity via immunisation simulates the body's response to an infection without the child manifesting the signs and symptoms of the disease. Hence, he remains well and is spared from the disease complications.

5. What is 'herd immunity'?

Herd immunity is immunity that is conferred to the community when the population is vaccinated adequately (above 80%), thus also providing protection to un-immunised people. The more the proportion of immunised individuals in the community, the less likely susceptible individuals (eg children who cannot be immunised due to young age, cancers, HIV/AIDS) would contract the disease.

6. How long does it take for a vaccine to work?

The normal immune response usually kicks in within 1-2 weeks. Vaccines based on killed germs or toxoids usually require a few doses for optimal protection. The Diphtheria-Pertussis-Tetanus-Polio-Haemophilus influenza B combination (DTaP-IPV-Hib) vaccine requires 3 primary doses about 1-2 months apart before full protection is acquired. Vaccines based on live attenuated (weakened) viruses only require 1-2 doses before full protection is acquired.

7. How long does protection last?

The table below summarises the research looking at various vaccines' duration of protection. Most life attenuated vaccines (eg measles, polio, rubella) confer life-long protection. Vaccines based on dead bacteria or toxoids often require boosters for optimal and lasting protection. The influenza virus is unique as vaccination is recommended every year, because the influenza virus is constantly mutating.

Vaccine	Protection (Years)
Hepatitis B	20
Hepatitis A	14
Measles	35 (Long term)
Chicken Pox	20
Polio	Long term
Rubella	21
Human Papilloma Virus	8

8. Can everybody be protected from diseases with immunisation?

There are vaccines for about 30 diseases. The level of protection offered varies but they are usually above 90% for the vaccinated child. For example, measles, mumps, rubella, tetanus, polio and Hib provide more than 95% protection to children who receive the complete dose.

Meanwhile, children who are not vaccinated with, say, the measles vaccine, are at high risk of contracting wild measles with all its associated complications like pneumonia (lung infection) or encephalitis (inflammation of the brain).

9. If vaccines are not 100% effective, what is the point of vaccinating?

Different people respond differently to vaccines. Some people may not generate an adequate immune response and may not be effectively protected after immunisation. Some vaccines require additional and booster doses to help raise immunity against specific diseases.

However, the protection offered by vaccines is better than no protection at all. They also prevent serious complications of diseases, such as disability or even death.

10. What is inside the vaccines?

The vaccine contains either:

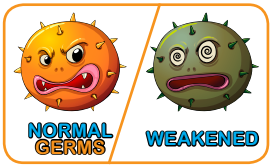
- Very small doses of live attenuated (weakened) virus
- Small doses of part of the bacteria or viruses that have died
- Small doses of the toxin from the bacteria that has been modified

Vaccines may also contain small amounts of preservatives or antibiotics to prolong their shelf life. Most vaccines contain small amounts of aluminum salts to produce better immune response.

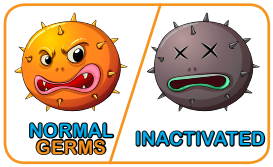
11. Why do children need to be immunised?

Immunisation is the safest and most effective way to provide protection against disease. Once immunised, your child will be less likely to catch the disease if an outbreak happens. Benefits of the protection against the disease far outweigh the risks of immunisation.

When most people in a community are immunised, the disease can no longer be transmitted from individual to individual (the effect of herd immunity). Eventually the disease will disappear by itself. This is how smallpox was eliminated and polio has disappeared in most countries.



Live vaccines containing live attenuated (weakened) bacteria.



Inactivated vaccine (eg whole cell vaccine) using the dead germs killed either with chemicals, heat or radiation.

The **subunit vaccines** (eg toxoid , conjugate, acellular , and recombinant DNA vaccines) using only certain parts of the germs.

12. Why do children need to be vaccinated at a young age?

Children are most vulnerable to diseases due to their weaker immune systems. Vaccines strengthen their immune system and protect them from potentially life-threatening complications. This is why the National Immunisation Schedule recommends that children are vaccinated as early as possible.

13. Why do children need different types of immunisation?

Some immunisations are required in the first year of life to protect them from serious childhood illnesses. The child's immune system does not function as well as adults, thus different types of vaccines are needed.

14. Should parents be immunised too?

Adults should be similarly protected from vaccine-preventable diseases. For example, many often fail to obtain their booster doses of Tdap and develop recurrent coughing due to pertussis (whooping cough). They then transmit it to their babies and children, who suffer severely from this disease.

The immunisation of mothers with tetanus has virtually eliminated tetanus in newborns. Similarly, congenital rubella syndrome in babies was eliminated by the MMR vaccine.

Women suffer badly if they acquire influenza during pregnancy. Immunisation protects them from influenza and also confers protection to their newborns.

15. Are there reasons why someone should not be immunised?

Before you or anyone in your family receive a vaccine, it is important to discuss your family's medical history and any pre-existing medical conditions or allergies with your doctor. This will help determine whether you, or anyone in your family, should not receive specific vaccines. The following individuals are advised to talk to their doctors before receiving immunisations:

- Have experienced a serious reaction to a previous dose of a vaccine.
- Have pre-existing medical conditions such as cancer, HIV/AIDS, diabetes, heart and lung diseases, and others.
- Receiving treatment for cancer or steroid-therapy, as this weakens your immune system.
- Pregnant women, as certain live vaccines are not recommended during pregnancy.
- Feeling unwell on the day of vaccination (having a fever or cold).

Vaccination Schedule

1. How is the immunisation schedule established?

The National Immunisation Programme (NIP) is developed based on recommendations from physicians, paediatricians, epidemiologists, infectious disease experts, immunologists and public health experts. The schedule is evaluated every year based on the latest scientific data. Adjustments are made when necessary to provide the best protection to children against vaccine-preventable diseases.

2. How is the timing and duration between injections determined?

Each vaccine dose is scheduled based on the child's optimal age to produce the best immune response at the earliest age possible. Several doses of the vaccine need to be spaced within a certain time frame to produce a boosting, protective response.

3. Are there different immunisation schedules in doctors' offices, clinics or hospitals?

Different immunisation schedules are due to differences in reference sources, the shift in the epidemiology of specific diseases, modifications to accommodate parents' schedules, or special considerations based on the condition of infants and children at that time. One example is the Japanese Encephalitis vaccine, which is included into the Immunisation Programme only for the state of Sarawak in Malaysia.

Although the schedules are different, all of them generally fall within the range recommended by the World Health Organisation (WHO). Immunisation schedules also vary between countries to suit their respective needs.

4. Which immunisation schedule is the best?

The ideal schedule is one that keeps within the age range recommended by the Ministry of Health or WHO. However, consideration must be given to the infant/child's condition during the time of vaccination, whether the infant/child has any contraindications to vaccination, as well as the

request of parents. Based on these considerations, adjustments can be made for the benefit of the child.

5. Is there a schedule that fits all children?

Immunisation schedules only serve as a general guideline for healthy children. Some medical conditions require vaccinations to be postponed. Some children are unable to take specific vaccines because of certain medications, severe allergies to certain ingredients in the vaccine or a weak immune system. Consult your paediatrician about your child's specific condition.

6. Can I follow an alternative immunisation schedule instead of the NIP?

There is no research to support alternative schedules and their effect on the immune response. There is no scientific basis or evidence that alternative dosages and timings are safe and effective.

7. Can we give the vaccination with a longer interval period or wait until my son grows older?

Some vaccine-preventable diseases can cause death in very young infants, hence they should not be left unprotected for too long. The recommended immunisation schedule is designed to suit the age and time interval that is needed for the vaccine to work optimally towards priming the baby's immune system.

8. If a child is fully immunised during childhood, is it necessary to re-immunise during school age?

After the primary doses of some vaccines eg DTaP-IPV-Hib and MMR, the levels of the protective antibodies may gradually decline. That is why booster doses are required.

The first booster for DTaP-IPV-Hib is done at 18-24 months. The Hib component should be preserved after this but the DTaP-IPV would require a further boost at 6 years (Primary 1) and 12 years old (Primary 6).

In adults, one further dose of Tdap is required. MMR given at 1 year old would only require a second dose, given any time 3 months after the first dose. This is scheduled at Primary 1 for Malaysia's NIP.

9. Should the immunisation schedule for pre-term/ premature infants be delayed?

No. Preterm and Low Birth Weight (LBW) infants are at greater risk of increased morbidity from vaccine-preventable diseases. Moreover, many preterm infants have the disadvantage of being unable to receive

immunisations in a timely manner because of medical complications related to prematurity.

Medically stable preterm and LBW infants should receive all routinely recommended childhood vaccines at the same chronological age and dosages as full-term infants.

10. How long is the interval required between the oral polio vaccine and breastfeeding?

Breastmilk can be given soon after oral polio immunisation at the age of more than 1 week. Mother's milk produced in the first one week post-delivery (colostrum) contains high amounts of antibodies which binds to the oral polio vaccine. In most countries now, the polio vaccine is given as an Injectable Polio Vaccine (IPV) in a combination of DTaP-IPV-Hib.

Correct Administration of Vaccines

1. Is it dangerous giving a few vaccines together simultaneously?

No. Some bacteria or viruses that are introduced into the body will stimulate specific memory cells respectively. The immunisation is done on different parts of the body (eg at the thigh, left and right arm), using different syringes. Vaccines administered simultaneously have the following benefits:

- Less pain
- Less hospital visits
- Better compliance
- Catch up on incomplete immunisation can be done at one visit

Examples are the 6-in-1 DTaP-IPV-Hib-Hep B, and the 3-in-1 MMR vaccines. These routinely recommended vaccines can be given simultaneously, at different body sites. They do not interfere with the immune response of the other components of the vaccine nor increase the rates of adverse effects compared to vaccines given individually.

2. What if baby vomits out the polio vaccine?

If vomiting occurs before 10 minutes, a same dose can be repeated immediately. If vomiting recurs, repeat the following day.

3. What if we forget a dose? Do we need to repeat the whole immunisation?

No. The body's immune system can 'remember' the previous vaccine stimulation. Just continue with the incomplete vaccination.

4. Why are certain vaccines injected at different body parts, even though it is sometimes the same vaccine?

Selection of the vaccine's injection site is based on several considerations:

- Depth of muscle
- Layer of fat tissue
- The site for optimal immunity

- Minimise injury to tissues, blood vessels, and nerves
- Minimise discomfort in infants and children due to movement and touch, especially when the baby can walk
- Aesthetic considerations

The different injection sites makes no difference in immunity offered, provided the depth of insertion of needles during the injection (whether intradermal, subcutaneous, intramuscular) is in accordance with their respective recommendations.

5. If the child develops a reaction after the immunisation, what happens to the subsequent dose?

The next dose can be given as scheduled if the reaction is mild (eg fever, pain or tenderness at the injection site). However, if the reaction is severe, it is advisable to inform your doctor. For instance, if a child develops severe reaction to the DPT vaccine, he/she should be given either the DTaP or DT only vaccination in the next visit.

Every immunisation reaction must be reported to the authorities so that every case can be investigated accordingly. Do not assume that the reaction is directly related to the immunisation; it could have been caused by other factors.

6. Is it possible to cut the doses into half or give it in split doses?

This is not encouraged as it would affect the vaccine's efficacy.

7. Do infants (under 1-year-old) need to immunised if they have already been infected with measles, rubella or chicken pox?

The diagnosis of measles and rubella without laboratory confirmation can be misleading. Children who are previously infected should still be given the MMR vaccination to boost their immunity. It does not pose any additional risks.

General Concerns

1. How can vaccines be safe if they are made from germs?

Vaccines only use parts of a germ or killed or weakened whole germs that are unable to cause disease. All recommended vaccines are shown to be safe.

2. How safe are vaccines?

Despite the negativity on social media, all vaccines recommended by World Health Organisation, Centre of Disease Control and other global health agencies are safe. Extensive vaccine research has been undertaken to ensure both their safety and efficacy, since vaccines are administered to otherwise well children.

It takes more than 10 years to develop a single vaccine, because vaccines must first be proven safe and effective before reaching the public. Once a vaccine prototype is created, pre-clinical tests are first conducted on animals. Then the vaccine undergoes 4 phases of clinical trials, tested on humans.

If research shows that the vaccine is safe and effective in Phase III, the manufacturer applies for a license from the regulatory authorities eg Food and Drug Administration (FDA) in the USA. Phase 4 post-license monitoring gives valuable information about the vaccine's long-term safety and efficacy.

3. My child is healthy and strong. Why does he/she need immunisation?

There is no guarantee that a healthy child will always be free from infectious vaccine-preventable diseases. Disease can strike when you least expect them to. Once vaccinated, your child will be protected from these diseases.

4. Do vaccines cause side effects?

Vaccines sometimes cause adverse effects, but most are mild and go away within a few days. On the other hand, vaccine-preventable disease can be serious, even deadly. The vaccine's benefits clearly and definitively outweigh the risks associated with it.

Common side effects are redness, pain and swelling at the injection site, mild fever, and fussiness in the child. If your child experiences a reaction at the injection site, use a cool, wet cloth to reduce redness, soreness and swelling. Consider giving paracetamol to relieve the pain and fever.

Serious side effects following vaccination, such as severe allergic reaction, are very rare and usually happen within minutes of being vaccinated. Doctors and clinic staff are trained to deal with them.

5. Why do we need to give so many injections?

A single dose of vaccine can only provide limited protection. For some vaccines, three or four consecutive doses are needed for optimum protective effect. The first dose will lead to a minimal response, while subsequent doses will trigger stronger immune response.

6. There seems to be too many childhood vaccines. Won't my child's immune system be overwhelmed?

No, vaccines will not overwhelm your child's immune system as it responds to multiple challenges. Every day, your child's immune system is exposed to many foreign antigens (substances not found naturally in the body) through activities such as eating, drinking and playing. In comparison, vaccines contain a much smaller number of antigens. Hence, even when multiple vaccines are given at the same time or within a short period, they will not harm your child's immune system.

7. Can we immunise infants/children with a cold or cough?

Yes. Babies with a mild cold, cough or diarrhoea without fever, can receive immunisation. If they are very irritable, the immunisation can be delayed 1-2 weeks.

8. Can the child be immunised while on antibiotics?

Yes, because antibiotics do not interfere with the vaccine's potential to work. Antibiotics work against the bacterial infection that is currently attacking the body, not against the bacterial antigen in the vaccine.

9. Can a child be immunised while on other medications?

It would be advisable to ask your doctor for advice. Most vaccines can be safely taken while on other medications with the exception of steroid treatment for children who are immunocompromised.

The immunosuppressive effects of steroid treatment vary, but many clinicians consider a dose equivalent to either 2mg/kg of body weight or a total of 20 mg/day of prednisone as sufficiently immunosuppressive to raise concern about the safety of immunisation with live-virus vaccines. Corticosteroids used in greater than physiologic doses also may reduce the immune response to vaccines.

The paediatrician would advise waiting at least 3 months after discontinuing therapy before administrating a live-virus vaccine to patients who have received high-dose systemic steroids for greater than or equal to 2 weeks. This does not apply to attenuated (or dead) vaccines.

10. Can children who suffer from epilepsy be immunised?

Stable neurological disorders and a history of seizures or epilepsy in the family is not a contraindication to DPT vaccination. It is advisable to immunise with the DTaP vaccine, which has a lower risk of causing fever that triggers febrile fits or fits. Should fever still occur, parents or caregivers should immediately give anti-pyretics (eg paracetamol) to reduce the fever.

11. Can we immunise a child with allergies?

Patients with allergic conditions eg asthma and eczema can be immunised. However, caution is necessary if the child is allergic to the protein in eggs. Any history of anaphylactic reactions to eggs (eg hives, swelling of the mouth or throat, difficulty breathing, wheezing, drop in blood pressure or shock) is a contraindication to the influenza and yellow fever vaccines.

Although the measles and mumps vaccine are made in cells derived from chicken eggs, the final vaccine does not contain enough chicken proteins to cause major problems. Studies have shown that children with severe egg allergies may continue to receive the MMR vaccine without problems.

Myths and Facts

Myth #1: No one else is at risk if I don't vaccinate my children

Fact: Unvaccinated kids and adults pose a risk to others, especially those who are too young to be vaccinated and those with immune problems (eg people with immune-deficiencies, cancers, etc) who cannot be vaccinated.

Unvaccinated children and adults are responsible for starting most of the outbreaks today. Almost all who develop measles during outbreaks are unvaccinated or incompletely vaccinated.

- 2011: Measles outbreak in Europe - 30,000 cases, causing 8 deaths, 27 cases of measles encephalitis, and 1,482 cases of pneumonia. 82% were unvaccinated and 13% incompletely vaccinated.
- 2014: Australia - 227 measles cases, most were unvaccinated.
- 2015: United States - 170 measles cases across 17 states and rising. Most were unvaccinated.

2 - 5% do not respond to their first dose of measles vaccine, hence a second (booster) dose is recommended. More than 99% develop immunity to measles after two doses of the measles vaccine, like MMR. Measles is fatal in about 0.2% of cases. It is expensive to contain a measles outbreak.

Myth #2: Better hygiene and sanitation decreased infections, not vaccines

Fact: Smallpox, diphtheria, polio, measles, etc. were eradicated at different times in history. If hygiene and better nutrition were the reasons, wouldn't they all be eradicated at the same time?

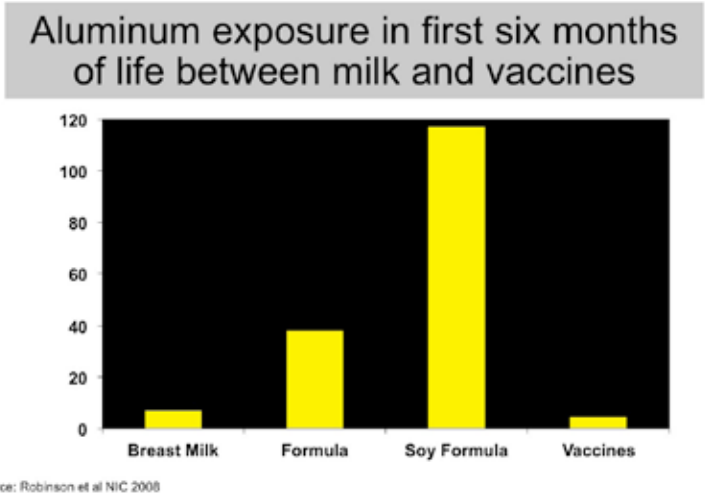
And why did other diseases, like rotavirus and chicken pox, decrease so much later, only when their vaccines were introduced? In 1963, there were 400,000 cases of measles worldwide. After the measles vaccine was introduced in 1970, the number dropped to 25,000 cases.

Myth #3: Natural immunity is better than immunity from vaccination

Infection	Complications
Diptheria	Myocarditis, Neuritis, Death 5-20%
Haemophilus Influenza	Meningitis, Deafness, Death 2-5%
Mumps	Meningitis, Encephalitis, Deafness, Orchitis, Oophoritis, Pancreatitis
Polio	Meningitis, Paralysis, Death 2-5%
Whooping Cough	Encephalopathy, Fits, Pneumonia, Death 0.2%

Myth #4: Vaccines contain dangerous toxic chemicals

Fact: Vaccines do not contain ingredients that will harm the body. Conversely, each ingredient used in vaccines plays a necessary role in the making of the vaccine, and also to ensure that the final product is safe and effective. Moreover, every batch of vaccine is tested rigorously for safety, so vaccines are generally safe to use.



Source: Robinson et al NIC 2008

Aluminium

Acts as an adjuvant to enhance the vaccine's immune response. The content of aluminium in breast milk is higher than in vaccines.

Formaldehyde

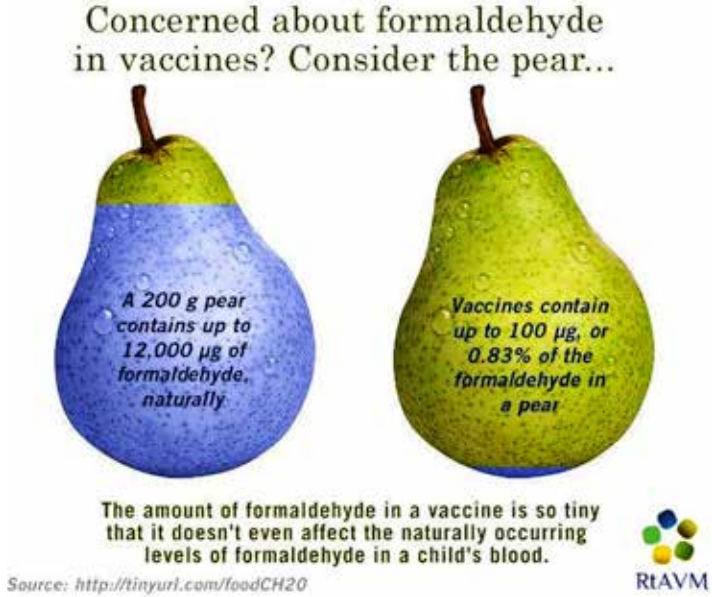
Essential for the synthesis of DNA and amino acids (the building blocks of protein). It kills the virus or inactivates the toxins during the manufacturing process. Formaldehyde in human blood is higher than the levels found in vaccines.

Mercury (thimerosal)

Used only in multi-dose vials to prevent bacterial and fungal contamination. The breastfed baby ingests twice the amount of mercury from breast milk than from vaccines. Nonetheless, virtually all vaccines, except for the influenza vaccine, are now mercury-free. Breast milk contains 15 times more mercury than in influenza vaccines.

Chemical substances exist in the natural environment and become toxic only when it exceeds a certain level or threshold. None of the content in vaccines or vaccine combinations in the recommended immunisation schedule approaches the threshold of harmful toxins.

Your baby may have allergies to certain components of the vaccine, but this is very rare. Any allergic reactions to vaccines must be reported immediately to medical personnel, so that appropriate action can be taken. All allergic reactions reported against vaccines are taken seriously by the government.



The facts about mercury in childhood vaccines

Vaccines: Mercury content

Common childhood vaccines and thimerosal (ethyl mercury) content:

Vaccine	Thimerosal Status
Dtap (diphtheria, tetanus, pertusis)	
• Infanrix, Daptacel	None
Dtap-HepB-IPV (diptheria, tetanus, pertusis, hepatitis B, polio)	
• Pediarix	None
Pneumococcal conjugate	
• Prevnar	None
Inactivated Polliovirus	
• IPOL	None
Varicella (chicken pox)	
• Varivax	None
Measles, mumps, rubella	
• M-M-R-II	None
Hepatitis B	None
• Recombivax HB	None
• Engerix B	None
Haemophilus B influenzae	
• ActHIB	None
• PedvaxHIB	None
• HibTITER single dose	None
HIB/Hepatitis B combination	
• Comvax	None
Varicella (chicken pox)	
• Fluzone w/ thimerosal	.01%
• Fluzone w/o thimerosal	None
• Fluvirin w/ preservative	.01%
• Fluvirin w/o preservative	None
• FluMist	None

Myth #5: Vaccines contain ingredients derived from pigs

Fact: In some vaccines, the enzyme (eg trypsin) used during the manufacturing process are of porcine origin. However, the amount used is extremely small. An ultra-filtration process removes them completely, leaving no trace of it in the final product.

Many fatwa councils worldwide have declared that these vaccines (eg oral polio vaccine, rotavirus vaccine) are permissible and can be used by Muslims. For more information, please visit the Department of Islamic Development Malaysia's website at www.islam.gov.my.

Myth #6: Vaccines are made with aborted fetal tissue

Fact: Varicella, rubella, hepatitis A, shingles and rabies vaccine are made in fetal embryo fibroblast cells that were first obtained from elective termination of two pregnancies in the early 1960s. The pregnancies were NOT aborted for vaccine research.

These cells continued growing in the laboratory and no further sources of fetal cells were needed. There is no aborted fetal tissue in the vaccine itself.

Human Fetal Cells were utilised because viruses grow better in humans cells compared to animal cells. Normal cells die after about 50 divisions, whereas fetal cells can go through many more divisions before dying.

If you have concerns whether this is halal (permissible), kindly refer to the unequivocal fatwas (religious edicts) related to the permissible use of cells or organs in the following documents:

a. Aborted fetuses (Islamic Org of Medical Sciences IOMS 1989, pg 335)
b. Surplus embryos in IVF (IOMS 1987 pg 337)
c. An encephalic baby (IOMS 1989, pg 340)

Myth #7: Infants get natural immunity from their mothers

Fact: Newborns may receive some immunity (in the form of maternal antibodies) from their mothers during the last few weeks of pregnancy. However, this maternal immunity only protects the baby from diseases that the mother is immune to and is only temporary. Once it wears off by 9 months, infants will be at risk of catching diseases.

Myth #8: Natural immunity is better than immunity from vaccines

Fact: In order to develop natural immunity to a disease, your child needs to catch and recover from the disease first. This will put your child at risk of potentially life-threatening complications. Vaccines offer protection that is as good as that of natural immunity, without putting your child through such risk.

Myth #9: Vaccines weaken the immune system

Fact: Certain germs such as from chicken pox or measles can weaken the immune system. Upon infection with these wild germs, the child is unable to fight off other germs, eg flesh-eating disease (necrotizing fasciitis) in a child with chicken pox.

The vaccine viruses in chicken pox and measles are different from the wild virus that causes chicken pox and measles. The vaccine viruses are attenuated and weakened, thus they are unable to weaken the immune system but are enough to trigger it to form protective antibodies.

Myth #10: Immunisation is no longer relevant or necessary today

Fact: Many vaccine preventable diseases eg measles, pertussis, influenza and meningitis are still prevalent in the world and can spread rapidly, while diphtheria and polio are still endemic in many developing countries. Modern air travel has rapidly increased the speed at which infections spread around the world.

While nutritious food, clean water and better living environments are important for our overall health and hygiene, they do not stop the transmission of these contagious diseases. Vaccines provide specific protection against these diseases and prevent their spread.

Immunisations have reduced most of these diseases to very low levels but the bacteria and viruses that are responsible for these diseases still remain in our environment. Immunisations are still needed to protect children from these diseases.

Try talking with your parent, or caregivers, or infectious disease specialist, and you will hear a lot of tragic events where these diseases can kill. The problem is we do not know when disease will strike.

Myth #11: Multiple vaccines at once will overwhelm my child's immune system

Fact: Infants and children can respond effectively to the many antigens (substances that trigger the immune response) found daily in their environment, which are much greater than any combination of existing vaccines in the immunisation schedule.

Myth #12: Nutritious food and breastfeeding is enough protection for my child

Fact: Unless you have been immunised or exposed to the disease, you will not have these antibodies in breast milk. Also, antibodies are transferred passively from mother to baby for a temporary period. It will decline in numbers by 6 weeks and disappear within a few months of breastfeeding.

Vaccines for infants are designed to stimulate the infant immune system to form its own response to infection exposure, when passive immunity begins to decline and is no longer able to offer protection.

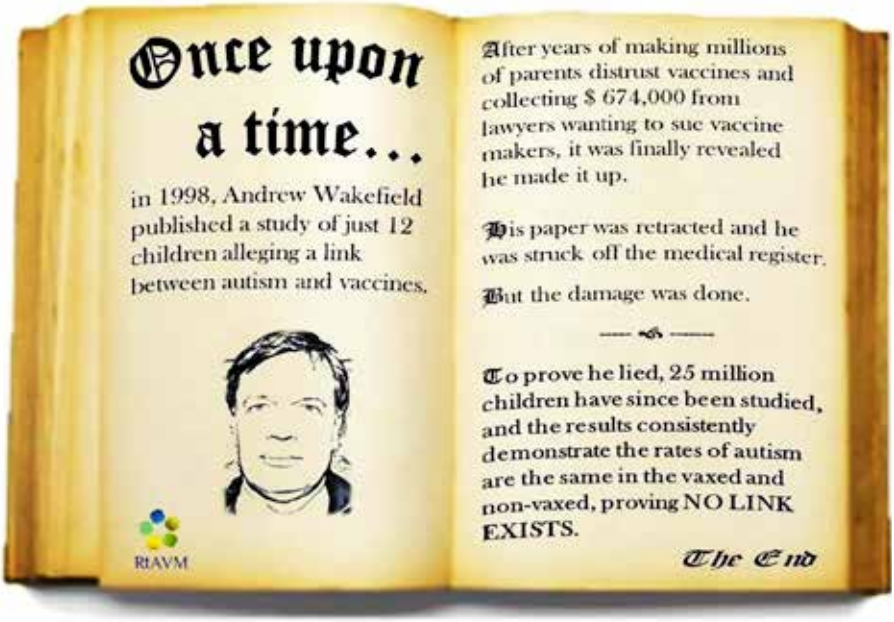
Each one of these lethal diseases has the ability to kill infants in their first year of age. Therefore, it is crucial to stimulate the baby's immune system when passive immunity begins to decline. Eating nutritious foods and taking care of your health is good for maintaining general health, but unfortunately it will not give specific immunity against diseases the way vaccines do.

Myth #13: The measles, mumps and rubella (MMR) vaccine causes autism in children

Fact: The alleged link between MMR and autism was first mooted by Wakefield in 1998. The findings were never reproduced; 11 of his co-authors withdrew; the paper was discredited and withdrawn by the Lancet. Wakefield had serious ethical and financial conflicts and he was summoned before the British General Medical Council. He was sanctioned and his license was revoked. The details of Wakefield's elaborate fraud were published in the British Medical Journal.

Subsequent research conducted in Denmark involving 2 million children showed that MMR vaccine does not cause autism. This very large study clearly demonstrated no link between MMR and autism by comparing the rates of autism and autism spectrum disorders in MMR immunised children to the rates of MMR un-immunized children.

A more recent study analysed 20,000 papers published between 2010-2013 and determined that none of the present vaccines were associated with autism.


Once upon a time...
in 1998, Andrew Wakefield published a study of just 12 children alleging a link between autism and vaccines.
RIAVM
After years of making millions of parents distrust vaccines and collecting $ 674,000 from lawyers wanting to sue vaccine makers, it was finally revealed he made it up.
His paper was retracted and he was struck off the medical register.
But the damage was done.
To prove he lied, 25 million children have since been studied, and the results consistently demonstrate the rates of autism are the same in the vaxed and non-vaxed, proving NO LINK EXISTS.
The End

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7. Polio – The End Game

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Chapter 3: The Islamic Interpretation Of Immunisation

5. Immunisation from the Perspective of Maqasid Shariah

The word mafsadah, derived from the root word fasada or fasad, has been mentioned almost fifty times in the Qur'an and has a wide range of meanings, amongst others:"a state of disorder, or disturbance, or of destruction, annihilation, waste, or ruin" (Lane, 1978: 1/ 2396). It also connotes mischief, corruption, exploitation, wrong, and all forms of injustice, mismanagement, anarchy, and chaos. Fasad is the opposite of islah, derived from the root word Îalaĺa, which literally means "good, incorrupt, sound, right, or a proper state, or in a state of order" (Lane, 1978: 2/216). Islah refers to a state of equilibrium where things are in a proper order and balance. Muslim jurists have also used the word sharr (evil) and darar (harm) as synonymous with mafsadah.

Chapter 4: Frequently Asked Questions

- http://www.immunise4life.my/Immunisation/Immunisation_English/FAQs/
- http://www.health.gov.au/internet/immunise/publishing.nsf/Content/faq
- http://www.idai.or.id/imunisasi/artikel.asp?q=20090310095322

Appendices

THE MALAYSIAN IMMUNISATION SCHEDULE

Vaccines provided by the Ministry of Health under the NIP

When your child should be immunised

The vaccines	Your child's age in months (up to 18 months)												Your child's age in years (up to 13 years)							
	0	1	2	3	4	5	6	9	10	12	15	18	2	2½	3	5	6	7	8	13
BCG[1]																		If no scar		
Hepatitis B																				
DTaP[2]																				
Polio[3]			IPV	IPV		IPV						IPV						OPV		
Hib[4]																				
DT[5]																				
MMR[6]																				
Measles[7]																				
JE[8]																				
HPV[9]																				3 doses

[1] BCG stands for Bacille Calmette-Guerin, which is the vaccine to protect against tuberculosis.
[2] DTaP is the combination vaccine that protects against diphtheria, tetanus and pertussis. This vaccine is given together with the polio and Hib vaccines as a single injection.
[3] The inactivated polio vaccine (IPV) is given at 2, 3, 5 and 18 months of age. The oral polio vaccine (OPV) is given at 7 years of age.
[4] Hib stands for *Haemophilus influenzae* type b.
[5] DT is a booster dose given to protect against diphtheria and tetanus.
[6] MMR stands for measles, mumps and rubella.
[7] The measles vaccine is only given in Sabah. For all other states, protection against measles is given at 12 months by the MMR vaccine.
[8] JE stands for Japanese encephalitis. The vaccine is only given in Sarawak. Boosters doses of the vaccine are also given at 11 and 14 years of age.
[9] HPV stands for human papillomavirus. The vaccine is only available to 13 year old girls in 3 separate doses over a period of 6 months.

Primary dose
Booster dose

IMMUNISATION SCHEDULE FOR ADDITIONAL VACCINES[1]

When your child should get these recommended vaccines

The vaccines	Your child's age in months (up to 18 months)													Your child's age in years (over 2 years)						
	0	1	1½	2	3	4	5	6	9	10	12	15	18	2	2½	3	4	5	6	≥ 9
Rotavirus[2]			2 or 3 doses (given 4 weeks apart)																	
Pneumococcal				2 to 4 doses																
Influenza								2 doses 1 month apart initially, followed by 1 dose every year												
Hepatitis A											2 doses (6 months apart)									
Chickenpox (Varicella)											2 doses (at least 8 weeks apart)									
Meningococcal[3]									1 dose *											

[1] Disclaimer: This schedule is meant to serve as a guide. Please consult your doctor for more information on any of these vaccines.
[2] Rotavirus vaccine is an oral vaccine and the number of doses depends on the vaccine manufacturer.
[3] Meningococcal vaccine is valid for 3 years. There are now meningococcal conjugate vaccines available for those more than 3 months old.
* Dosage depends on vaccine given. There are newer vaccines available that can be given at 2 months and 9 months of age.

2014 Recommended Immunizations for Children from Birth Through 16 Years Old

	Vaccine	BIRTH	1 month	2 months	3 months	4 months	5 months	6 months	9 months	10 months	12 months	18 months	6 years	9 years	11 years	13 years	16 years
National Immunisation Programme (Introduced by the Ministry of Health)	BCG	●											● (if no scar)				
	Hepatitis B	●	●					●									
	DTaP[1]			●	●		●					●	● (dT2)				
	Polio			●	●		●					●					
	Hib			●	●		●					●					
	Measles[2]							●									
	MMR										●		●				
	Japanese Encephalitis[3] (available in Sarawak only)								from 9 months – 4 years								
	Human papillomavirus (HPV)															● (3 doses within 6 months)	
Other Recommended Vaccines	Rotavirus[4]			2 or 3 doses before 6 months													
	Pneumococcal			●		●		●			●						
	Influenza (annually)	from 6 months & above															
	Hepatitis A	from 1 year & above (2 doses at least 6 months apart)															
	Varicella[5] (for Chickenpox)	2 doses at least 3 months apart															
	Meningococcal[6]	from 2 years or 11 years depending on brand															●
	Tdap	from 11 years and above															

Indonesia Recommended Immunisation Schedule

Jadwal Imunisasi Anak Umur 0 – 18 tahun

Rekomendasi Ikatan Dokter Anak Indonesia (IDAI), Tahun 2014

Jenis vaksin	Umur pemberian vaksin																		
	Bulan												Tahun						
	Lahir	1	2	3	4	5	6	9	12	15	18	24	3	5	6	7	8	10	12	18
Hepatitis B	1	2					3													
Polio	0		1		2		3				4			5						
BCG	1 kali																			
DTP			1		2		3				4			5				6 (Td)		7(Td)
Hib			1		2		3			4										
PCV			1		2		3		4											
Rotavirus			1		2		3													
Influenza	Ulangan 1 kali tiap tahun																			
Campak								1				2			3					
MMR										1				2						
Tifoid												Ulangan tiap 3 tahun								
Hepatitis A												2 kali, interval 6-12 bulan								
Varisela									1 kali											
HPV																		3 kali		

Keterangan

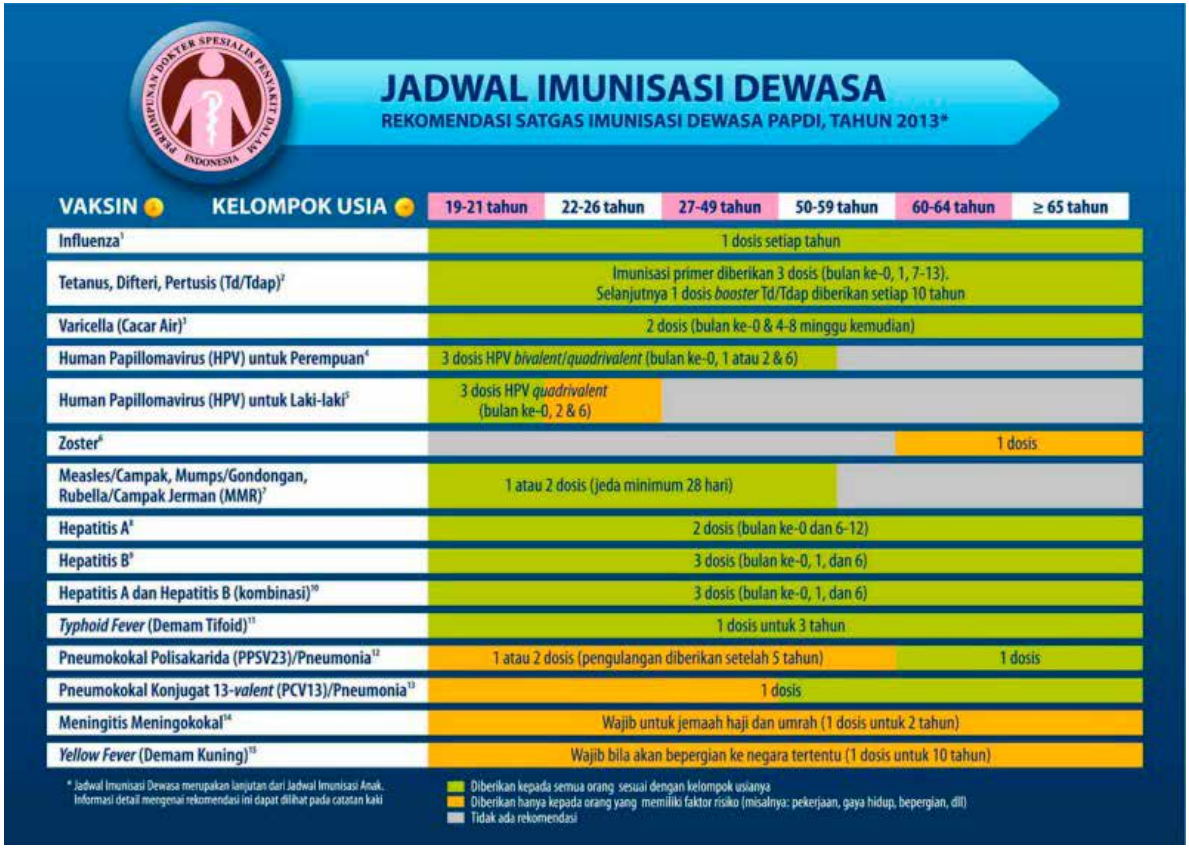
Cara membaca kolom umur: misal 2 berarti umur 2 bulan (60 hari) sd 2 bulan 29 hari (89 hari)

Rekomendasi imunisasi berlaku mulai 1 Januari 2014 dan dapat diakses pada website IDAI (http://idai.or.id/public-articles/klinik/imunisasi/jadwal-imunisasi-anak-idai.html)

Untuk memahami tabel jadwal imunisasi perlu membaca keterangan tabel

1. **Vaksin hepatitis B. Paling baik** diberikan dalam waktu 12 jam setelah lahir dan didahului pemberian suntikan vitamin K_1. Bayi lahir dari ibu HBsAg positif, diberikan vaksin hepatitis B dan imunoglobulin hepatitis B (HBIg) pada ekstremitas yang berbeda. Vaksinasi hepatitis B selanjutnya dapat menggunakan vaksin hepatitis B monovalen atau vaksin kombinasi.
2. **Vaksin polio.** Pada saat lahir atau pada saat bayi dipulangkan **harus diberikan** vaksin polio oral (OPV-0). Selanjutnya, untuk polio-1, polio-2, polio-3 dan polio *booster* dapat diberikan vaksin OPV atau IPV, namun sebaiknya paling sedikit mendapat satu dosis vaksin IPV.
3. **Vaksin BCG.** Pemberian vaksin BCG dianjurkan sebelum 3 bulan, optimal umur 2 bulan. Apabila diberikan sesudah umur 3 bulan, perlu dilakukan uji tuberkulin.
4. **Vaksin DTP.** Vaksin DTP **pertama** diberikan paling cepat pada umur 6 minggu. Dapat diberikan vaksin DTwP atau DTaP atau kombinasi dengan vaksin lain. Untuk anak umur lebih dari 7 tahun diberikan vaksin Td, dibooster setiap 10 tahun.
5. **Vaksin campak.** Vaksin campak kedua tidak perlu diberikan pada umur 24 bulan, apabila MMR sudah diberikan pada 15 bulan.
6. **Vaksin pneumokokus (PCV).** Apabila diberikan pada umur 7-12 bulan, PCV diberikan 2 kali dengan interval 2 bulan; pada umur lebih dari 1 tahun diberikan 1 kali, namun keduanya perlu *booster* 1 kali pada umur lebih dari 12 bulan atau minimal 2 bulan setelah dosis terakhir. Pada anak umur di atas 2 tahun PCV diberikan cukup satu kali.
7. **Vaksin rotavirus. Vaksin rotavirus** monovalen diberikan 2 kali, vaksin rotavirus pentavalen diberikan 3 kali. Vaksin rotavirus monovalen dosis I diberikan umur 6-14 minggu, dosis ke-2 diberikan dengan interval minimal 4 minggu. Sebaiknya vaksin rotavirus monovalen selesai diberikan sebelum umur 16 minggu dan tidak melampaui umur 24 minggu. Vaksin rotavirus pentavalen : dosis ke-1 diberikan umur 6-14 minggu, interval dosis ke-2 dan ke-3, 4-10 minggu; dosis ke-3 diberikan pada umur kurang dari 32 minggu (interval minimal 4 minggu).
8. **Vaksin varisela.** Vaksin varisela dapat diberikan setelah umur 12 bulan, terbaik pada umur sebelum masuk sekolah dasar. Apabila diberikan pada umur lebih dari 12 tahun, perlu 2 dosis dengan interval minimal 4 minggu.
9. **Vaksin influenza.** Vaksin influenza diberikan pada umur minimal 6 bulan, diulang setiap tahun. Untuk imunisasi pertama kali (*primary immunization*) pada anak umur kurang dari 9 tahun diberi dua kali dengan interval minimal 4 minggu. Untuk anak 6 - < 36 bulan, dosis 0,25 mL.
10. **Vaksin *human papiloma virus* (HPV).** Vaksin HPV dapat diberikan mulai umur 10 tahun. Vaksin HPV bivalen diberikan tiga kali dengan interval 0, 1, 6 bulan; vaksin HPV tetravalen dengan interval 0,2,6 bulan.

Adult Immunisation Schedule Indonesia



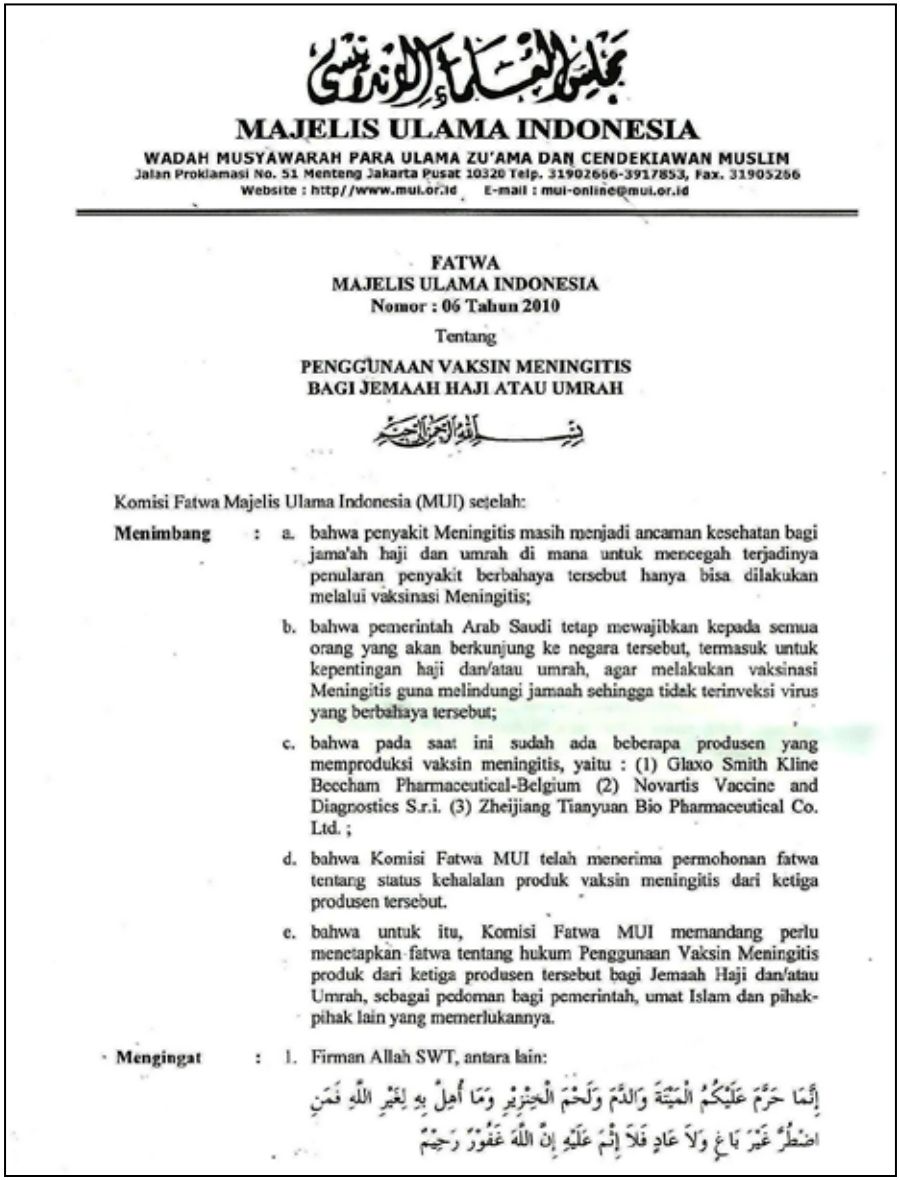
US CDC Immunisation Catch-up Schedule

FIGURE 2. Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind — United States • 2013

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

Persons aged 4 months through 6 years					
Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to dose 2	Dose 2 to dose 3	Dose 3 to dose 4	Dose 4 to dose 5
Hepatitis B[1]	Birth	4 weeks	8 weeks and at least 16 weeks after first dose; minimum age for the final dose is 24 weeks		
Rotavirus[2]	6 weeks	4 weeks	4 weeks[2]		
Diphtheria, tetanus, pertussis[3]	6 weeks	4 weeks	4 weeks	6 months	6 months[3]
Haemophilus influenzae type b[4]	6 weeks	4 weeks if first dose administered at younger than age 12 months 8 weeks (as final dose) if first dose administered at age 12–14 months No further doses needed if first dose administered at age 15 months or older	4 weeks[4] if current age is younger than 12 months 8 weeks (as final dose)[4] if current age is 12 months or older and first dose administered at younger than age 12 months and second dose administered at younger than 15 months No further doses needed if previous dose administered at age 15 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months	
Pneumococcal[5]	6 weeks	4 weeks if first dose administered at younger than age 12 months 8 weeks (as final dose for healthy children) if first dose administered at age 12 months or older or current age 24 through 59 months No further doses needed for healthy children if first dose administered at age 24 months or older	4 weeks if current age is younger than 12 months 8 weeks (as final dose for healthy children) if current age is 12 months or older No further doses needed for healthy children if previous dose administered at age 24 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age	
Inactivated poliovirus[7]	6 weeks	4 weeks	4 weeks	6 months[7] minimum age 4 years for final dose	
Meningococcal[13]	6 weeks	8 weeks[13]	see footnote 13	see footnote 13	
Measles, mumps, rubella[9]	12 months	4 weeks			
Varicella[10]	12 months	3 months			
Hepatitis A[11]	12 months	6 months			
Persons aged 7 through 18 years					
Tetanus, diphtheria; tetanus, diphtheria, pertussis[6]	7 years[6]	4 weeks	4 weeks if first dose administered at younger than age 12 months 6 months if first dose administered at 12 months or older	6 months if first dose administered at younger than age 12 months	

Majelis Ulama Indonesia (MUI) Fatwa Documents



مجلس العلماء الإندونيسي

MAJELIS ULAMA INDONESIA

WADAH MUSYAWARAH PARA ULAMA ZU'AMA DAN CENDEKIAWAN MUSLIM
Jalan Proklamasi No. 51 Menteng Jakarta Pusat 10320 Telp. 31902666-3917853, Fax. 31905256
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FATWA
MAJELIS ULAMA INDONESIA
Nomor : 06 Tahun 2010

Tentang

PENGGUNAAN VAKSIN MENINGITIS
BAGI JEMAAH HAJI ATAU UMRAH

بسم الله الرحمن الرحيم

Komisi Fatwa Majelis Ulama Indonesia (MUI) setelah:

Menimbang :

a. bahwa penyakit Meningitis masih menjadi ancaman kesehatan bagi jama'ah haji dan umrah di mana untuk mencegah terjadinya penularan penyakit berbahaya tersebut hanya bisa dilakukan melalui vaksinasi Meningitis;

b. bahwa pemerintah Arab Saudi tetap mewajibkan kepada semua orang yang akan berkunjung ke negara tersebut, termasuk untuk kepentingan haji dan/atau umrah, agar melakukan vaksinasi Meningitis guna melindungi jamaah sehingga tidak terinveksi virus yang berbahaya tersebut;

c. bahwa pada saat ini sudah ada beberapa produsen yang memproduksi vaksin meningitis, yaitu : (1) Glaxo Smith Kline Beecham Pharmaceutical-Belgium (2) Novartis Vaccine and Diagnostics S.r.i. (3) Zheijiang Tianyuan Bio Pharmaceutical Co. Ltd. ;

d. bahwa Komisi Fatwa MUI telah menerima permohonan fatwa tentang status kehalalan produk vaksin meningitis dari ketiga produsen tersebut.

e. bahwa untuk itu, Komisi Fatwa MUI memandang perlu menetapkan fatwa tentang hukum Penggunaan Vaksin Meningitis produk dari ketiga produsen tersebut bagi Jemaah Haji dan/atau Umrah, sebagai pedoman bagi pemerintah, umat Islam dan pihak-pihak lain yang memerlukannya.

Mengingat :

1. Firman Allah SWT, antara lain:

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنزِيرِ وَمَا أُهِلَّ بِهِ لِغَيْرِ اللَّهِ فَمَنِ اضْطُرَّ غَيْرَ بَاغٍ وَلاَ عَادٍ فَلاَ إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَّحِيمٌ

"Sesungguhnya Allah hanya mengharamkan bagimu bangkai, darah, daging babi, dan binatang yang (ketika disembelih) disebut (nama) selain Allah. Akan tetapi, barangsiapa dalam keadaan terpaksa (memakannya) sedang ia tidak menginginkannya dan tidak (pula) melampui batas, maka tidak ada dosa baginya. Sesungguhnya Allah Maha Pengampun, lagi Maha Penyayang". (QS. Al-Baqarah [2]: 173).

حُرِّمَتْ عَلَيْكُمُ الْمَيْتَةُ وَالدَّمُ وَلَحْمُ الْخِنْزِيرِ وَمَا أُهِلَّ لِغَيْرِ اللَّهِ بِهِ وَالْمُنْخَنِقَةُ وَالْمَوْقُوذَةُ وَالْمُتَرَدِّيَةُ وَالنَّطِيحَةُ وَمَا أَكَلَ السَّبُعُ إِلاَّ مَا ذَكَّيْتُمْ وَمَا ذُبِحَ عَلَى النُّصُبِ

"Diharamkan bagimu (memakan) bangkai, darah, daging babi, (daging hewan) yang disembelih atas nama selain Allah, yang tercekik, yang dipukul, yang jatuh, yang ditanduk, dan yang diterkam binatang buas, kecuali yang sempat kamu menyembelihnya, dan (diharamkan bagimu memakan hewan) yang disembelih untuk berhala..." (QS. Al-Maidah[5]: 3)

قُلْ لاَ أَجِدُ فِي مَا أُوحِيَ إِلَيَّ مُحَرَّمًا عَلَى طَاعِمٍ يَطْعَمُهُ إِلاَّ أَنْ يَكُونَ مَيْتَةً أَوْ دَمًا مَسْفُوحًا أَوْ لَحْمَ خِنْزِيرٍ فَإِنَّهُ رِجْسٌ أَوْ فِسْقًا أُهِلَّ لِغَيْرِ اللَّهِ بِهِ فَمَنِ اضْطُرَّ غَيْرَ بَاغٍ وَلاَ عَادٍ فَإِنَّ رَبَّكَ غَفُورٌ رَحِيمٌ

"Katakanlah Tiadalah aku peroleh dalam wahyu yang diwahyukan kepadaku sesuatu yang diharamkan bagi orang yang hendak memakannya, kecuali kalau makanan itu bangkai, darah yang mengalir, atau daging babi, karena sesungguhnya semua itu kotor, atau binatang yang disembelih atas nama selain Allah. Barang siapa yang dalam keadaan terpaksa (memakannya) sedang ia tidak menginginkannya dan tidak (pula) melampaui batas, maka sesungguhnya Tuhanmu Maha Pengampun, Maha Penyayang." (QS. Al-An'am[6]: 145)

2. Hadits-hadits Nabi SAW, antara lain:

تَدَاوَوْا فَإِنَّ اللَّهَ عَزَّ وَجَلَّ لَمْ يَضَعْ دَاءً إِلَّا وَضَعَ لَهُ دَوَاءً غَيْرَ دَاءٍ وَاحِدٍ، الْهَرَمُ (رواه أبو داوود عن أسامة ابن شريك)

"Berobatlah; karena Allah tidak membuat penyakit kecuali membuat pula obatnya selain satu penyakit, yaitu pikun (tua)". (HR. Abu Daud dari Usamah bin Syarik).

إِنَّ اللَّهَ أَنْزَلَ الدَّاءَ وَالدَّوَاءَ وَجَعَلَ لِكُلِّ دَاءٍ دَوَاءً فَتَدَاوَوْا وَلَا تَدَاوَوْا بِحَرَامٍ (رواه أبو داوود عن أبي الدرداء)

"Allah telah menurunkan penyakit dan obat, serta menjadikan obat bagi setiap penyakit; maka, berobatlah dan janganlah berobat dengan benda yang haram." (HR. Abu Daud dari Abu Darda)."

قَدِمَ أُنَاسٌ مِنْ عُكْلٍ أَوْ عُرَيْنَةَ فَاجْتَوَوْا الْمَدِينَةَ فَأَمَرَهُمْ النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ بِلِقَاحٍ وَأَنْ يَشْرَبُوا مِنْ أَبْوَالِهَا وَأَلْبَانِهَا (رواه البخاري عن أنس ابن مالك)

"Sekelompok orang dari suku Ukl atau Urainah datang dan tidak cocok dengan udara Madinah (sehingga mereka jatuh sakit); maka Nabi SAW memerintahkan agar mereka diberi unta perah dan (agar mereka) meminum air kencing dan susu dari unta tersebut..." (HR. Al-Bukhari dari Anas bin Malik).

مَا أَنْزَلَ اللَّهُ دَاءً إِلَّا أَنْزَلَ لَهُ شِفَاءً (رواه البخاري عن أبي هريرة)

"Allah tidak menurunkan suatu penyakit kecuali menurunkan (pula) obatnya." (HR. Al-Bukhari dari Abu Hurairah).

سُئِلَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ عَنْ فَأْرَةٍ وَقَعَتْ فِي سَمْنٍ فَمَاتَتْ فَقَالَ إِنْ كَانَ جَامِدًا فَخُذُوهَا وَمَا حَوْلَهَا وَكُلُوا مَا بَقِيَ وَإِنْ كَانَ مَائِعًا فَلَا تَأْكُلُوهُ (رواه أحمد عن أبي هريرة)

"Rasulullah SAW ditanya tentang tikus yang jatuh ke dalam keju. Beliau SAW menjawab: "Jika keju itu keras (padat), buanglah tikus itu dan keju sekitarnya, dan makanlah (sisa) keju tersebut; namun jika keju itu cair, maka janganlah kamu memakannya" (HR. Ahmad dari Abu Hurairah).

3. Kaidah-kaidah tentang *sad adzari'ah*:

Memperhatikan :

1. Pendapat para ulama, antara lain ;

وَقَالَ الزُّهْرِيُّ لَا يَحِلُّ شُرْبُ بَوْلِ النَّاسِ لِشِدَّةٍ تَنْزِلُ بِأَنَّهُ رِجْسٌ قَالَ اللَّهُ تَعَالَى { أُحِلَّ لَكُمْ الطَّيِّبَاتُ } وَقَالَ ابْنُ مَسْعُودٍ فِي السُّكْرِ إِنَّ اللَّهَ لَمْ يَجْعَلْ شِفَاءَكُمْ فِيمَا حَرَّمَ عَلَيْكُمْ

"Imam Zuhri (w. 124 H) berkata, Tidak halal meminum air seni manusia karena suatu penyakit yang diderita, sebab itu adalah najis; Allah berfirman: '...Dihalalkan bagimu yang baik-baik (suci)...' (QS. Al-Maidah[5]: 5). *Dan Ibnu Mas'ud (w 32 H) berkata tentang sakar (minuman keras), Allah tidakmenjadikan obatmu pada sesuatu yang diharamkan atasmu"* **(HR al-Bukhari, *Shahih al-Bukhari*,** Maktabah Syamilah, juz 17, h. 328).

2. Pendapat para ulama tentang rukun dan syarat *tathhir* (pensucian).
3. Keterangan Menteri Kesehatan RI pada tanggal 9 Juli 2010 yang menyatakan bahwa sampai saat ini kebijakan mewajibkan para pengunjung Arab Saudi memakai vaksin meningitis masih tetap berlaku.

4. Laporan dan Penjelasan Hasil Audit Tim Auditor LPPOM MUI ke tiga perusahaan vaksin meningitis yaitu:
   a. Tim auditor Glaxo Smith Kline Beecham Pharmaceutical-Belgium, yang menyatakan antara lain bahwa dalam proses produksi vaksin di perusahaan ini pernah bersentuhan dengan bahan yang tercemar babi.
   b. Tim auditor Novartis Vaccine and Diagnostics S.r.i., yang menyatakan antara lain bahwa dalam proses produksi vaksin di perusahaan ini tidak bersentuhan dengan babi atau bahan yang tercemar babi dan telah melalui proses pencucian.
   c. Tim auditor Zheijiang Tianyuan Bio Pharmaceutical Co. Ltd., yang menyatakan antara lain bahwa dalam proses produksi vaksin di perusahaan ini tidak bersentuhan dengan babi atau bahan yang tercemar babi dan telah melalui proses pencucian.
5. Pendapat peserta rapat Komisi Fatwa pada tanggal 10 Juni 2010, 12 Juni 2010, 16 Juni 2010, tanggal 22 Juni 2010, 24 Juni 2010, tanggal 30 Juni 2010, 9 Juli 2010, dan 16 Juli 2010, yang antara lain :
   a. bahwa produk vaksin yang dalam proses produksinya pernah bersentuhan dengan bahan yang tercemar babi dinyatakan telah memanfaatkan (*intifa'*) babi.
   b. bahwa produk vaksin yang dalam proses produksinya tidak bersentuhan dengan babi atau bahan yang tercemar babi tapi bersentuhan dengan bahan najis selain babi dapat disucikan kembali.
   c. Pencucian dalam proses produksi vaksin di perusahaan Novartis Vaccine and Diagnostics S.r.i dan Zheijiang Tianyuan Bio Pharmaceutical Co. Ltd dipandang telah memenuhi ketentuan pencucian secara syara' (*tathhir syar'an*).

Dengan bertawakal kepada Allah SWT

MEMUTUSKAN

Menetapkan : **FATWA TENTANG PENGGUNAAN VAKSIN MENINGITIS BAGI JEMAAH HAJI ATAU UMRAH**

Ketentuan Umum :

Dalam fatwa ini, yang dimaksud dengan :

a. Vaksin Mencevax^{TM} ACW135Y adalah vaksin meningitis yang diproduksi oleh Glaxo Smith Kline Beecham Pharmaceutical-Belgium.
b. Vaksin Menveo Meningococcal adalah vaksin yang mempunyai nama produksi Menveo Meningococcal Group A, C, W135 and Y Conyugate Vaccine yang diproduksi oleh Novartis Vaccine and Diagnostics S.r.i.
c. Vaksin Meningococcal adalah vaksin yang mempunyai nama produksi Meningococcal Vaccine yang diproduksi oleh Zheijiang Tianyuan Bio Pharmaceutical Co. Ltd.

Ketentuan Hukum :

1. Vaksin Mencevax^{TM} ACW135Y hukumnya Haram.
2. Vaksin Menyeo Meningococcal dan Vaksin Meningococcal hukumnya Halal.
3. Vaksin yang boleh digunakan hanyalah vaksin meningitis yang halal.
4. Ketentuan dalam Fatwa MUI Nomor 5 Tahun 2009 yang menyatakan bahwa bagi orang yang melaksanakan haji wajib atau umrah wajib boleh menggunakan vaksin meningitis haram karena *al-hajah* (kebutuhan mendesak) **dinyatakan tidak berlaku lagi**.

Ditetapkan di : Jakarta
Pada tanggal : 4 Sya'ban 1431 H
16 Juli 2010 M

KOMISI FATWA
MAJELIS ULAMA INDONESIA

Ketua,

DR. H. M. ANWAR IBRAHIM

Sekretaris,

DR. H. HASANUDIN, M.Ag

Mengetahui,
DEWAN PIMPINAN
MAJELIS ULAMA INDONESIA

Ketua,

K. H. MA'RUF AMIN

Sekretaris Umum,

DRS. H. M. ICHWAN SAM

Saudi Grand Mufti Shaykh Abdul Aziz bin Abdullah bin Baaz Fatwa Documents

Fatwa from the Grand Mufti of Saudi Arabia

HIS IMMINENCE (LATE) SK. ABDUL AZIZ IBN ABDULLAH IBN BAAZ,
GRAND MUFTI OF SAUDI ARABIA &
PRESIDENT, COMMITTEE OF MUSLIM SCHOLARS
AND OFFICE OF ACADEMIC RESEARCH AND IFTA.

The English translation is as follows:

FATWA (LEGAL ISLAMIC VERDICT) ON POLIO VACCINATION.

"Nothing wrong in Polio Vaccination because it is a means of useful treatment like other permissible medication. It is not pessimism, which is forbidden. May Allah grant all His "Tawfeeq" and help us for doing good."

Al-Azhar Grand Imam Shaykh Dr Mohamed Sayed Al-Tantawi Fatwa Documents

Statement on Islam and on Parents' Responsibilities towards Their Children and Immunizing Them against Diseases Such As Polio

by

Grand Imam of El Azhar Al Sharif, Egypt
- Dr. Mohamed Sayed Tantawi

There is a number of general rules and guiding principles, in which Islam dictates how child survival and development is imperative and that any negligence or slackening in the execution of this principle is a great vice. These principles are exemplified in the following

"Nor kill (or destroy) yourselves."
- Surat IV (Nisaa) Verse 29

"If anyone slew a person –unless it be for murder or for spreading mischief on earth- it would be as if he slew the whole people and if anyone saved a life, it would be as if he saved the life of the whole people."
- Surat V (Maida) Verse 35.

"Kill not your children."
- Surat VI (Anaam) Verse 140

"And make not your own hands contribute to (your) destruction."
- Surat II (Baqara) Verse 195

And in the Hadith Sharif "There is no bigger sin than neglecting your dependence."

Islam regards man as Gods' vicegerent on earth. It is mentioned in the Koran:

" I will create a vicegerent on earth."
- Surat II (Baqara) Verse 30

And everything that exposes this vicegerence to opprobrium or disgrace , or weakens man's strength is prohibited by Islamic Sharia. This is to preserve man's revered and powerful position as God's vicegerent on earth.

Islam's consideration for child survival and protection is in itself an empowerment of the Moslem Community whether physically or spiritually, as it entails strong and healthy bodies. Healthy bodies in Islam will not only result in sound intellectual functioning but also in the prevalence of optimism and hopefulness in dealing with life and with people.

It is for these reasons that Islam includes all the necessary preventive measures to preserve the life of the Muslims and guide them in a systematic and organized way throughout their life.

In Hadith by Al Tormozie, it is mentioned that the prophet would ask God for nothing more appealing than sound health.

It is therefore evident that Islam emphasizes protection during lifetime involving the protection from diseases and epidemics and all that can affect man due to negligence and lack of concern. It is mentioned in the Koran:

"And make not your own hands contribute to (your) destruction."
- Surat II (Baqara) Verse 195

In the previous verse, God prohibits a man from personally contributing to his own self destruction, though actions that he might perform according to his own will. Through hurting oneself or self destruction may seem in contradiction with the mind's logical thinking, nevertheless it is very likely to happen through man's negligence or lack of concern as regards taking the necessary preventive measures to preserve his own life.

Islam, therefore, dictates people to seek the necessary preventive measures and to seek treatment for all diseases. The prophet mentioned:

"God did make a cure for every disease."
- Hadith Sharif

The Sharia had ordained parents as responsible for their child survival and development, on the basis that the child is considered a bestowable consignment, which ought to be cherished by parents as they will account for it to God.

The child in the early years of his life is unaware as to the real dangers that might threaten him, in addition to that he is unable to cater for and protect his life, and it is for this reason that God made parents responsible for the protection of their children from diseases and from the dangers that might threaten their survival and development. It is mentioned that:

"You are all patronizers and are all responsible for your dependants. The father patronizes his family and is responsible for his dependants. The woman patronizes her husband's wealth and children and is responsible for her dependants and the servant patronizes his master's wealth and is responsible for his dependants. Are not all of you patronizers for your dependants."

Among the dangers that might threaten the child's survival in his early years is the possibility of falling victim to one of the child killing diseases such as polio, measles, DPT, etc. or to severe dehydration resulting from diarrhoeal diseases. All these diseases would attach the child and severely handicap or cripple him, glooming his life and that of his parents.

The prophet elaborates on the issue of mercy and protection and how mercy is a part of protection and protection is a part of mercy.

"Those who are not merciful, are denied mercy and those who are not forgivable are denied forgiveness and those who do not repent are denied repentance and those who do not protect themselves are denied protection."
- Hadith Sharif

In this hadith, the Prophet emphasizes that mercy is a principal and states that whoever does not protect himself, God shall not protect him from disease and sickness. Though that issue is stated, nevertheless, the prophet had phrased it logically in the form of payer. He emphasized that whoever does not protect himself or protect others against and from all that could be of harm or could lead to danger or disease, God cannot protect him or them from it.

Islam strongly warns us from neglecting the protection and treatment of our children from these child-killing diseases or others for it dictates that its believer should be strong and healthy. It is mentioned:

"the strong Moslem (believer) is better and closer to God than the weak one."
- Hadith Sharif

The State provides immunization for children for free and all what parents need to do is to immunize their children against these fatal dangers. Polio immunization is considered a preventive measure required by Islam and it should not to be taken lightly.

We, as parents, should not neglect our children's rights and to provide them with the best available treatments as recommended by physicians and scientists, thus abiding by God's words:

"Always ask those who have the knowledge."

Children immunization against infectious disease like polio is performed in all countries worldwide in order to guarantee that our children have a better future free from diseases and disabilities.

It is therefore the responsibility of all Muslim parents to make sure that their children complete all mass immunization dosages whether routine immunization or through immunization campaigns. Furthermore, full and complete cooperation with all campaign workers is required since they are trying to reach each and every child in order to immunize all children against this virus, which is in accordance with the Hadith Sharif:

"God had ordered us to be accurate in doing everything."

The State, research centers, and the World Health Organization have all approved of polio vaccines and confirmed their efficiency and quality.

Finally, it is our utmost duty as Muslims to reaffirm that Islam supports children's rights. It is our task as Muslims to become role models aware of our duties as well as our rights while abiding by God's words

"You are the best of the nations raised up for (the benefit of) men."

God bless us all.

Grand Imam of El Azhar Al Sharif
Dr. Mohamed Sayed Tantawi

Dr Yusuf Al-Qaradawi Fatwa Documents

Fifteen Session of the International Islamic Fiqh Assembly
held in Muscat, Oman. March 2004

FATWA on use of oral polio vaccines

Authored and Signed by
Dr Youssouf Al-Qaradawi
Member of the Fiqh Assembly of the World Muslim League
Member of the International Islamic Fiqh Assembly
Chairman, European Council for Fatwa and Research,

The following are my brother members and experts of the Fiqh Assembly who agree with me about this *Fatwa*:

Sheikh M.T. Othmani, Pakistan, Dr W. Zuhaili, Syria, Dr A. Abu Ghudda, Syria, Sheikh K. Al Mays, Lebanon, Sheikh M.A. Taskhiri, Iran, Dr R. Osman, Egypt, Dr Ali Karadaghi, Qatar, Sheikh M.A. Khalili, Mufti of Oman, Sheikh A. ben Baya, Mauritania, Dr A. Al-Nashami, Kuwait, Dr M. Abdul Raheem, Chief Scholar, UAE, and Dr A. Al Mahmoud, Bahrain and may others.

What I and other *fiqh* experts attending the above mentioned Assembly would like to reiterate is the following:

1. Every Muslim must as far as possible ward off any kind of evil and not risk his own life; he must not do anything suicidal, as his own soul is but something with which Allah has entrusted him and which he therefore has no right to forgo. Allah says in the Koran "... and be not cast by your own hand to ruin ...). He also says: " Kill not thyselves. Lo! Allah is ever merciful unto you." In one of the military expeditions, Amr ibn

Al-As, one of the prophet's companions, led the prayer one icy cold winter night, without performing the major ablutions after nocturnal emissions, but had performed Tawaminum (washing oneself with clean sand). His troops complained about this to the prophet (Peace be upon him). Amr explained what he had done to the prophet saying: It was bitterly cold and I remembered what Allah said: "Kill not thyselves, lo! Allah is ever merciful to you!". The prophet (Peace be upon him) smiled and this means that he approved what Amr had done. Thus we derive from this event that an important principle of *fiqh* (jurisprudence) which states that "damage must be warded off to the extent possible". This rule is derived from the tradition of the prophet (Peace be upon him) which says: "There should be neither harming nor reciprocating harm." (Related by Ibn Majah, Al-Daraqutni and others.) Another principle states that "warding off evil takes precedence over deriving benefits".

2. Parents must provide their offspring and infants with all possible means of protection in order as far as possible to prevent all types of harm befalling them throughout their lives. This is part of parents' custodial responsibility entrusted to them by almighty Allah. No one, endowed with sense, doubts that poliomyelitis is a severe pernicious and crippling disease. Children who fall victim to this grave disease becomes dependent on others for everything, causing him long-term social and psychological harm.

   If there is a possibility of avoiding this disease forever by taking doses of a preventive vaccine in order to ward off this scourge, parents then must do their utmost to administer the vaccine to their offspring, thus protecting them from this terrible disease. If parents, for no reasons of force majeure, refuse to do so they are then, responsible for neglecting their offspring and squandering their health capital, as well as for their sufferings throughout their lives, as they are deemed to be the custodians of their children. As the prophet said "It is sin enough for one to cause the loss of whom he feeds". He also said "Allah will ask anyone entrusted with a charge to explain if he has fulfilled it or not".

3. Officials in each country must enact laws and develop systems capable of protecting people's health in general and children, in particular, not only by curing them but also through prevention. As the proverb says: "Prevention is better than cure". There is also the Hadith of the prophet related by all authorities "Each one of you is a custodian, he who is in the saddle (political) is the custodian of his subjects and is responsible for them, man is the custodian of his household and is responsible for it".

Omar Ibn Al-Khettab, the second Caliph, said: If only a kid perishes on the banks of the Euphrates, Allah will ask me about it on the Day of Judgement! Let alone the death of Muslim children singled out amongst all the other children in the world! Obedience to those who are in the saddle in this case is compulsory by virtue of the Koranic texts because it is done in order to achieve something beneficial.

4. Everything Allah has created for man is essentially pure and lawful (with a few exceptions). Allah says in the Koran: “He, it is, who created for you all that is in the earth ...” and He also says: “See you not how Allah hath made serviceable unto you whatsoever is in the skies and whatsoever is in the earth and hath loaded you with his favours both without and within?” Things are not to be considered impure except if one is certain of their impurity and they do not become unlawful except by evidence ...”. So there is no certainty as to the impurity or the harmfulness of the substances used in the vaccine, nor is it to be deemed a cause of infertility in women and to be banned and prohibited. The “Experts” are the people who are to determine the degree of harmfulness or impurity in each area as Allah says in the Koran: “None can inform you like he who is an expert ...” and He says: “Ask those who have the expertise (the guidance) if ye know not.”

   The experts in this are WHO specialists and EMRO officials who are not to be challenged as to their character, trustworthiness and competence. They say that this vaccine is neither harmful nor impure, and that it does not cause infertility. It has been tested and proved beneficial. Allah be praised for that.

5. This vaccine is taken by all children of all races and all religious persuasions around the world, including Muslim children in more than 50 countries and its harmlessness has been proved. No authority in those Islamic countries, in Africa or Asia, has said that administering such a vaccine is contrary to Shariah law. No cleric of the Al Azhar mosque or Al Qarawiyin (Morocco) or the Two Holy Mosques at Mecca and Medina, or any other Muslim country has forbidden it. So how is it that all eminent scholars of Islam in all countries of the world have nothing against the vaccine and only the Kano clerics are reluctant to use it! May Allah forgive them for this and mend their ways!

If they persist in refusing to vaccinate our children in northern Nigeria, our brethren in Kano, whom we appreciate and love, will be answerable to Almighty Allah, and indeed to the entire Muslim Ummah (nation) and to the world community, to the sin of squandering Muslim lives and putting Muslim children at risk of contracting a pernicious disease through no fault of their own, thus jeopardizing the lives of their neighbours and disrupting a

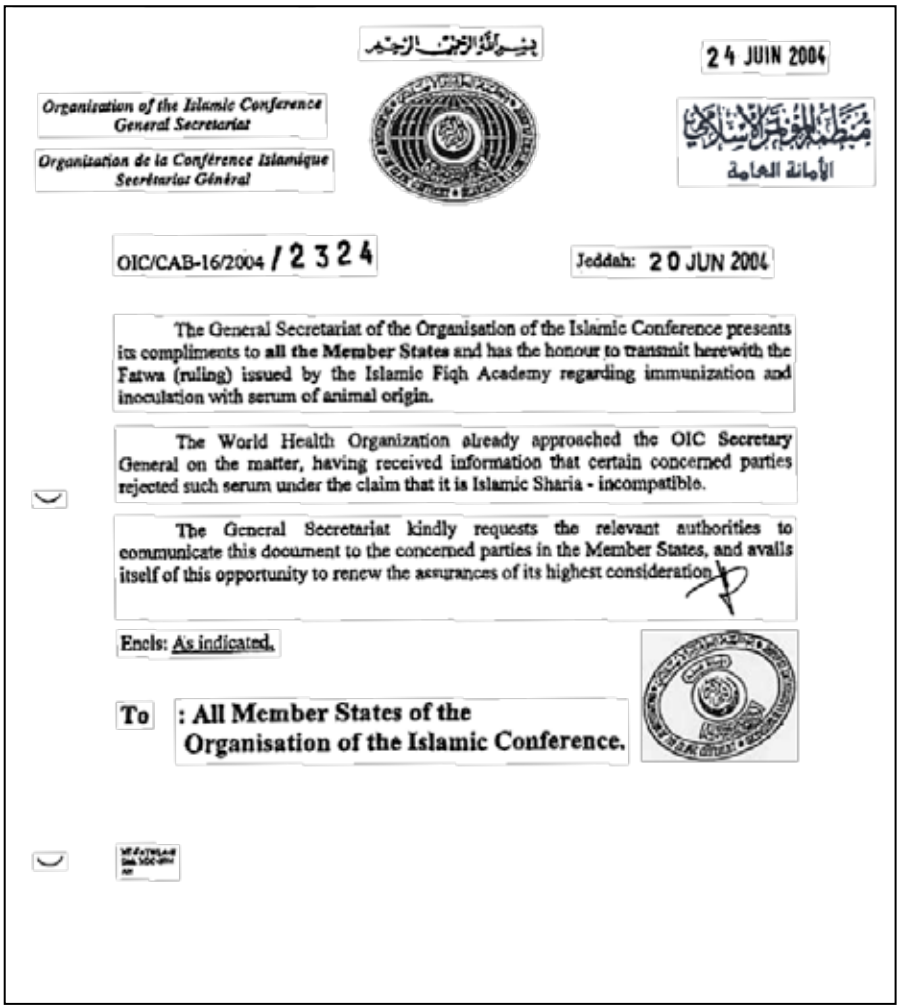
blessed process that aims to eradicate this disease from the world forever as has been done with smallpox. Our brothers in Kano will bear the burden of responsibility for distorting Islam by branding it as a religion that is hostile to science and an obstacle to medical and scientific progress, and Allah knows that Islam in no way justifies this accusation. Indeed Islam is a religion that respects the human body. The prophet (Peace be upon him) said in one of his Hadiths: “Indeed your body has a claim upon you.” Islam has made it compulsory for its adherents to seek treatment for ills and diseases in all forms. Medicine has occupied an eminent place in its civilization. Knowledge encompasses religion and vice versa.

Thus, we appeal to our brethren in Kano, Nigeria, and to all those who follow in their footsteps to revoke the *fatwa* that they have issued, or that has been issued without sufficient evidence, and without consulting other eminent Muslim scholars. Truth is to be followed. No one is infallible in this area, and Allah, who is omniscient, is far superior to those who know. Indeed to revert to the truth is far better than to persist in error.

If, however, our brothers in Kano persist in their error, and do not respond favourably to the wise counsel offered them by their brothers, the eminent scholars of the Islam Ummah (nation), and I am confident that they will not persist in their error. Then I request our Muslim brothers, the people of the State of Kano in northern Nigeria, to follow the *fatwa* of the “majority” of the Ulemas of the Muslim world, which far outweighs the *fatwa* of a minority of their fellow citizens in their province. They must start vaccinating their offspring against polio and hold the majority of the scholars of Islam responsible for it before Allah.

Allah speaks the truth and it is He who guides to the rightful path.

Organisation of Islamic Conference (OIC) 2004 Fatwa Documents



بسم الله الرحمن الرحيم

24 JUIN 2004

Organisation of the Islamic Conference
General Secretariat

Organisation de la Conférence Islamique
Secrétariat Général

منظمة المؤتمر الإسلامي
الأمانة العامة

OIC/CAB-16/2004 / 2324

Jeddah: 20 JUN 2004

The General Secretariat of the Organisation of the Islamic Conference presents its compliments to **all the Member States** and has the honour to transmit herewith the Fatwa (ruling) issued by the Islamic Fiqh Academy regarding immunization and inoculation with serum of animal origin.

The World Health Organization already approached the OIC Secretary General on the matter, having received information that certain concerned parties rejected such serum under the claim that it is Islamic Sharia - incompatible.

The General Secretariat kindly requests the relevant authorities to communicate this document to the concerned parties in the Member States, and avails itself of this opportunity to renew the assurances of its highest consideration.

Encls: As indicated.

To : All Member States of the Organisation of the Islamic Conference.

Sharia Ruling on Vaccination with Animal Serums Derived from Pork Meat

Praise and glory be to Almighty Allah Who has guided us onto the right and straight path, by sending us His noble Messenger and Prophet Muhammad, may Allah's peace and prayers be upon him. He has commanded us to do that which is good and banned that which is evil. In His infinite grace and mercy upon us, He has permitted us all those wholesome foods and proscribed those that are unwholesome (*Khabaith*).

Having said that, the homepage of *islamonline.net* published, on 22 July 2003, a poll on the use of pork enzymes in immunizing children against poliomyelitis. The website reported that these enzymes are formed from the disease-producing virus grown in a tissue culture consisting of reproductive, contiguous cells. The culture can only be successful if the virus is decomposed into its constituent cells by using the leaven of a pork-derived *Trypsine* enzyme. Accordingly, the question raised is this, is it permissible to use this serum of a porcine origin, bearing in mind that the Quran described pork as an impurity, that the Ummah is unanimous on the prohibition of all parts of the pork, which, therefore, cannot be lawful under any circumstances whatsoever.

In the same vein, we have received similar letters concerning Heparin extracted from pork offals—prescribed to treat coronary heart diseases, angina, severe myocardial infraction, and blood clots in the organism. Is it lawful to use this other pork-based product, *Heparin*, or should the familiar, express rulings prohibiting pork be observed?

Such questions have led us to provide some elements towards an answer with the aim of discriminating that which is right, preventing confusion, dispelling misgivings, and protecting people from a great many disasters, as we will show hereinafter, God willing.

In order to address these questions, first we shall have to explore the Sharia ruling on pork meat itself as well as on the purification of impure substances by means of transformation (*Istihala*). Then, we shall have to show which cases are considered *force majeure*, or absolute necessity—under Sharia Law; and to elucidate the ruling on treatment with these kinds of products and serums in view of the mystery or equivocation surrounding them that have led to hesitation in issuing a lawful ruling. Most certainly, our scholars have already tackled these issues with more or less divergence on the details, yet the problem remains thorny and merits our thorough examination.

First Issue: On Considering Pork Impure

The Holy Quran establishes this fact in the explicit contrast it makes between the very many permissible, wholesome foods (*Tayyibaat*) we are allowed to eat—which require that we give thanks to Almighty Allah for bestowing them upon us in such abundance—and the very few impure, unwholesome foods (*Khabaith*) which He has prohibited to us. This is clearly reflected in the following Quranic verses:

> *"O ye who believe! Eat of the (lawful) wholesome things with which We have provided you and give thanks to Allah, if it is Him ye worship. He has forbidden you the meat of a dead animal, blood, and the flesh of swine; also any flesh that is consecrated other than in the name of Allah. But whoever is compelled through necessity, intending neither abuse nor transgression, shall incur no sin. For Allah is Most Forgiving, Most Merciful."* (*Surah Al-Baqara (The Cow)*, 172-173).

The ruling contained in the above verses is corroborated in the following verse:

> *"Say: 'I find nothing in what has been revealed to me that forbids men to eat of any food except the meat of a dead animal, running blood, or the flesh of swine—for these are unclean—and any flesh that has been profanely consecrated to gods other than Allah. But whoever is constrained, intending neither abuse nor transgression, will find your Lord is Most Forgiving, Most Merciful."* (*Surah Al-An'am (Cattle)*, 145).

Pork—be it wild or domestic—is forbidden for consumption by the Quran, and so is its flesh, fat, and all its other parts, whether it be lawfully slaughtered or not. It is simply considered an impurity in itself by the majority of scholars, except for Malik, who viewed it as pure on the grounds of the life therein.

However, jurists are in disagreement over this animal's hair. Malik and Abu Hanifa argue that death does not impinge on the prohibition of wool, fur, and hair since it does not affect them, for death is an abstract meaning that settles in upon the extinction of life. And since life does not course in wool, fur, and hair, so death cannot overtake it there. Thus, this reasoning was used as grounds to allow shoemakers to utilize the swine's hair.

Second Issue: On Purifying Impurities by Transformation

Purifying impurity is a commandment under Sharia. Here, some have taken purification to mean either a lawful or a conditional obligation, where one remembers the impurity and is able to perform the purification. Others have taken it to be a simple recommendation (*Sunna*), and not an obligation. Evidence for the obligatory character of purification is offered in Allah's words: *"And purify thy garments."* (*Surah Al-Muddathir (The Cloaked One)*, 4).

In principle, purification is performed with water and total ablution (*Ghusl*), but other forms of purification have been added, such as tanning, transformation, drying, kneading, and lawful slaughter.

Transformation is the alteration of the essence of an impure or proscribed substance in such a way that it turns into another, different substance with a distinct appellation, qualities, and attributes.

Defining transformation, Al-Hattab said: "It is such a mutation of an impure substance that all its attributes are removed and replaced by different attributes, and that even its proper appellation is replaced by a different one" (See *Mawahib Al-Jalil*, 1/97).

In conventional terminology, transformation is defined as any chemical reaction that transforms a substance into a different compound through the use of scientific, technical means or other processes such as those mentioned by Muslim jurists, namely acetification, tanning, combustion, etc.

Some jurists, like Abu Youssef, do not recognize transformation arguing that impure substances can never become pure simply through the metamorphosis of their essence. (See *Fath Al-Qadir*, 1/139). Likewise, some followers of Imam Malik wholeheartedly espouse that same view. (See *Fatawa Ibn Taymiyah*, 21/70).

As for Al-Khatib Al-Sharbini, he argues: "An impure substance cannot become pure by total ablution (*Ghusl*) or by transformation" (See *Mughni Al-Muhtaj*, 1/81).

In his book titled *Al-Muhaddib*, Al-Shirazi states that "only two substances can be purified by transformation: the tanned skin of a dead animal, and wine" (1/10).

According to Ibn Qudamah, it is apparently admitted by this school that no impure substance can be purified by transformation, except for wine where it turns by itself into vinegar.

All these views are contradicted by that of Imam Muhammad Ibn Al-Hassan Al-Shaybani who argues that one of the forms of purification is metamorphosis (*Ingilaab*) of the essence of a substance, which applies equally to pork, animal carrion (*Mayyitat*), and wine. In his opinion, the argument for transformation is that it entails the alteration and metamorphosis of the essence of a substance, together with the diffusion of the evil thereof (*Umum Al-Balwa*). The majority of prominent jurists and scholars are of this view.

In "*Al-Muhit*", it is said that that is also the view of Imam Abu Hanifa and that the Sharia has founded its rulings on that reality to describe an impure substance that becomes pure with the loss of some, let alone of all its characteristics.

The Malikite school went so far as to assert that all that turns into good is pure, and all that turns into evil is impure.

The Dahiris advocate the following position: If the attributes of an impure or forbidden substance are transformed—so that this substance's appellation as the basis for which the ruling no longer holds true, and it takes up another appellation that makes it pure and therefore permissible—then, the substance is no longer that impure or forbidden one. Rather, it has become a different substance (See Ibn Hazm in his book *Al-Muhalla*, 1/131).

Ibn Taymiya holds the same view as that of the Hanifites and Malikites. He argues: That position is absolutely correct, since these substances were not the subject of prohibition in the letter or meaning of the Quran and Hadith. Therefore, they are neither expressly nor indirectly prohibited. Both the texts of the Quran and Hadith, and analogy require that these substances be analyzed. He added: If wine, which is the mother of all impurities, has been unanimously agreed among Muslims to become permissible when it metamorphoses by itself, it is even more appropriate that such other impurities as blood, animal carrion, and pork should become pure by transformation. (See *Compendium of Fatwas*, 21/517).

If, for example, these impurities fall into water or the like and they are transformed and dissolved, they are no longer blood, nor a carcass, nor pork meat at all. Likewise, if wine is dissolved in liquids, he who drinks it is not considered to have drunk wine. (See *Compendium of Fatwas*, 21/501, 502).

Ibn Al-Qayyim argues that the ruling on transformation is founded on the principle of change. Therefore, wine, by analogy, becomes pure by transformation. It is impure because it is described as such. Hence, if the cause is thus negated, so is the consequence. This, for him, is therefore the original ruling of Sharia Law in both its sources and ends. (See *I'lam Al-Muwaqqiine*, 1/486).

It follows from the affirmation that transformation changes the ruling on impurity and the impure that, dog and pig and their likes become pure if they are, in essence, transformed to other substances, such as salt or any other chemical compound.

And so is the ruling when the unwholesome turns wholesome, such as in the transformation of wine, animal manure, and other substances that are impure in their essences when they undergo chemical reactions and when artificial inputs are added to them. In these cases the result of such transformation is pure.

Third Issue: Necessity under Sharia

Substances impure in their essences, which are prohibited by the Lawgiver, are allowed to be taken only in cases of *force majeure*, or necessity under Sharia. This is the import of Allah's words in *Surah Al-Baqara (The Cow)*: *"But whoever is compelled through necessity, yet without abuse nor transgression, shall incur no sin. For Allah is Most Forgiving, Most Merciful"* and in *Surah Al-An'aam (The Cattle)*: *"But whoever is constrained, yet without abuse nor transgression, will find your Lord is Most Forgiving, Most Merciful."*

Al-Mudhtarr, the one driven by necessity, is the person in need, one who has been forced by necessity or need to eat of those prohibited things. He is one who has suffered harm or who fears death. He is also one who is forced to do something.

Harm (*Al-Dharar*) is the opposite of benefit (*Al-Naf'*). It signifies suffering that is unequal to benefit or that surpasses benefit. This is the case, for example, when the compulsion is exercised by an oppressor, or by hunger during a famine, or by poverty with no alternative available.

For anyone in this situation, no sin is incurred by eating prohibited things, provided they commit neither abuse nor transgression.

The oppressor (*Baaghee*) signifies one who seeks evil without any consideration of the good or evil nature of their deeds. Such a person is specifically referred to in the verse as the seeker after evil because, by the act of seeking, he deviates from the good requested of him to the evil forbidden to him. A person, who disobeys an Imam, and therefore the community, is an oppressor. Almighty Allah says: *"And if either of them oppresses the other..."* (*Surah Al-Hujurat*, 9).

The transgressor (*'Aadee*) signifies the one who exceeds that which is permissible to that which is not. It is also attributed to a highway robber, according to the interpretation of both Mujaahid and Ibn Jubair. In fact, the oppressor (*Baaghee*) is also a transgressor, and in the verse, it signifies one who exceeds the constraint of necessity to the point of free choice. (Ibn Al-'Arabi, 1/85).

The two verses indicate the reasoning for divine authorization (*Rukhsa*), with the aim of sparing the Ummah both oppression and transgression. They also define the constraint of necessity where one who is not given to oppression and transgression feels that he is about to commit them. In the verses, there is also the negation of sin on one who is driven by necessity to take or consume something.

Fourth Issue: Medication with Impure or Prohibited Substances

A consideration of this issue is, on the one hand, related to transformation and its rulings and on the other hand, to the fact that necessity in the case of medication is assimilated by analogy to necessity in the case of hunger.

On the whole, medication is compulsory and is not inconsistent with reliance on, and trust in Allah (*Tawakkul*). Medication can only be sought from lawful things, while prohibited things and things expressly prohibited by Allah, such as wine, cannot be used for medication.

According to Ibn Mas'ud "Allah, Praise and Glory be to Him, has not placed the cure of my Ummah in the things He prohibited them".

Imam Malik and the majority of scholars said: "These prohibited things and all things expressly prohibited by Allah, such as wine, are not to be used as medication".

The followers of Imam Shafi'i have rejected medication with anything prohibited, with the exception of those things mentioned in the Hadith about the people of 'Uran; while Ibn 'Abideen allowed medication with a prohibited substance if a Muslim doctor says that such a substance contains a cure and there is no permissible, viable alternative to it.

According to jurists: Prohibited substances that are needed are either in their original state or burned. If they change through burning, they may be used for medication, but if they remain intact, they may not be used at all for medication. Nor should pork be used, because there is a lawful alternative to it, as opposed to the case of famine. (See Ibn Al-'Arabi in his book: *Tafsir Al-Ahkam*, 1/87; Interpretation of verse 176 of *Surah Al-Baqara*).

According to Imam Muhammad Ibn Hasan Al-Shaybani, a substance changes through transformation.

Also, Al-Rahuni reported, on the authority of Ibn Ghazi, Al-Zanati's assertion concerning the use of an impure substance where the requirement for prohibition is the soaking of medication in wine. There are two opposing views on this: permission and proscription. If a substance does not change with transformation, such impurity is unanimously prohibited (See *Al-Rahuni's Annotation on Al-Zarqani*, 1/73).

There is unanimity among jurists on the use, in case of necessity, of impurities and prohibited foods with no alternatives. Wine is not a medication and so may be excluded from the category of proscribed things that may be used in case of necessity.

The majority of scholars allow the use of pork as a medication in cases of necessity but with conditions. According to Al-Nawawi: That is allowed only where the person seeking medication is knowledgeable in medicine and does not know of an alternative to the product, or if he is informed about that by an accredited Muslim doctor. (See *The Compendium*, 9/55).

On this issue, there are many views taken by jurists. We have only selected those statements issued by some scholarly or academic bodies.

The Eighth Symposium of the Islamic Organization for Medical Sciences (IOMS, Kuwait) held in Casablanca, on 22-24 May 1995, with the participation of the Islamic Fiqh Academy, under the theme "An Islamic Perspective of some Health Problems", stated its general principles in paragraphs 6 and 7 thus:

1 Alcohol, whether pure or diluted in water, is not an impure substance under Sharia provisions on the grounds that things are pure in their original states.

What is preponderant in this case is the position that the impurity of wine and other intoxicants is abstract and not physical.

2. Food substances whose composition involves untransformed pork fat, such as some types of cheese, oil, and fats, etc, are prohibited and should not be eaten at all, in view of the consensus of scholars that they are impure and should not be eaten, and because the consumption of these substances out of necessity is ruled out.

3. Pork-based insulin is permissible as medication for diabetic patients, out of necessity, under Sharia constraints.

Other recommendations made at the symposium are:

(a) Gelatin made from transformed bones, skin, and tendons of an impure animal is pure and lawful for consumption.

(b) Soap produced from transformed pork fat or animal carrion (unlawfully slaughtered) becomes pure by that transformation and may be used.

(c) Cheese, which is curdled by means of rennet from the carcass of an animal (unlawfully slaughtered) whose flesh is edible, is pure and can lawfully be eaten, as opposed to the following:

lotions, creams, and cosmetic materials whose composition contains pork fat, which are impure, and may not be used under Sharia law unless they meet the requirement of the transformation and metamorphosis of the essence (*'Ayn*) of the pork.

[*Ru'ya Islamiyya li-ba'dh Al-Mashakil Al-Sihhiyya* ("An Islamic Perspective of some Health Problems"), 1080]

The European Council for Fatwa and Research, which issued a ruling (*Fatwa*) on pork enzymes in polio medications during its meeting on 22 July 2003, after in-depth consideration, decided the following:

The benefits of using this medication have been medically proven in that it enables the immunization of children and their protection from polio, with Almighty Allah's grace. In addition, so far, there exists no other alternative to that medication. Accordingly, the use of such medication in both treatment and prevention is permissible in view of the substantial harm that would ensue from its prohibition. Thus, jurisprudence provides ample scope for absolving impurities—on the assumption that the fluid in question is impure—particularly because this impurity is dissolved either by means of dilution into massive quantities (Mukathara) or by total ablution (Ghusl). Moreover, this case falls within the category of necessities—or needs that are treated as necessities—since

it is known that a major objective of Sharia is to secure interests and benefits and ward off wickedness and harm.

The Seventeenth Session of the Islamic Fiqh Academy (IFA) convened in Makka Al-Mukarrama on 13-17 December 2003 provides a rationalization of the ruling on the use of *Heparin*—a medication which contains an ingredient derived from an impure entity, such as a pig, and which has an alternative but with lesser benefits. On this matter, the Academy decided:

(1) To permit treatment by means of the new Low-Molecular Weight Heparin, should a permissible, viable alternative not be available or should the alternative prolong the period of treatment.

(2) Not to unduly expand the scope of the use of Heparin, except where needed. Should an alternative become available that is certain to be pure, then it should be adopted in accordance with the original ruling and in order to avoid controversy.

(3) The Academy's Council recommends Health Ministers of the Islamic States to work in coordination with pharmaceutical companies manufacturing ordinary and new Low-Molecular Weight Heparin with a view to seeking its manufacture from an immaculate bovine source.

These decisions by the Academy are apparently not inconsistent with the rulings agreed by consensus. In fact, those medications were approved mostly:

(1) In order to allow people latitude in access to substances they direly need, or to which they are driven by necessity, or where no alternative is available.

(2) In order to protect human societies from distressful health disasters that are prone to spread and proliferate.

That is why, today, these scholarly institutions have leaned towards protecting and defining public interests in accordance with the intentions and objectives of Sharia.

We are aware that scientific progress is inexorably engaged in the pursuit of medication alternatives—particularly in favor of those, in the third world, who are in need but unable to afford the high costs of treatment for themselves or for their relatives and loved ones. Present-day technology—as reported on the home page of *Islamonline.net*—may provide vaccines and antigens that can be administered by injection or orally, but at a high cost. However, today, the search is on for alternatives thereof by way of the genetic engineering of plants to produce a vaccine against some infectious diseases or as a line of defense and immunity against other diseases. In fact, researchers have been able to genetically modify such plants as potatoes, clover, tomatoes, and bananas.

Specialized pharmaceutical laboratories are working hard to produce high-potency plant vaccines and serums (*Super Power Blast*) against deadly diseases. Until such results are tested and made massively available to the markets, the rule of thumb remains that of absolute necessity in working with the aforementioned medications available to the public.

Unquestionably, wisdom and religious duty require that we should use what we are driven to by necessity in the absence of other alternatives. This principle is almost unanimously agreed by the majority of jurists and doctors on the grounds of combating disease and protecting public health wherein all actors in the pharmaceutical industry as well as jurists are responsible for speeding up the treatment of those with infirmities or disabilities and for protecting them from death. For, Almighty Allah loves those who take advantage of His special permissions. Hence, some jurists have promised an ominous fate in hell to those who turn away from the exceptional license granted to use carrion, blood, and pork meat, because of their refusal to heed Allah's commandment in case of necessity and to take advantage of what Allah has made lawful.

Allah is the Supreme Authority vested with ultimate power. He commands everything and He is the Ultimate Sustainer. Prayers and blessings be upon our Prophet and Master Mohammed and on all his kin and companions.

Mohammed Al-Habib Ibn Al-Khoja,
Secretary-General of the Islamic Fiqh Academy,
May Allah Crown All his Work with Success and Shower him with His Mercy and Grace

International Islamic Fiqh 2009 Fatwa Documents

INTERNATIONAL ISLAMIC FIQH ACADEMY

No: 606/IFA/2009

Jeddah: 18/08/1430
09/08/2009

H.E. Professor Ekmeleddin Ihsanoglu
Secretary General of the
Organization of the Islamic Conference

As-salam alaykum warahmatullah wa barakatuh:

Sequel to the OIC General Secretariat's Note no. OIC/ST-16(19)/2009/004060 of 11 July 2009, seeking the IIFA Secretariat's clarification on vaccination against polio, the Academy issued a statement in this regard, a copy of which is transmitted to your Excellency herewith.

May Allah guide us to do His will and include this effort in our scale of good deeds.

Excellency, please accept my sincere regards and appreciation.

Professor Dr Abdul Salam Dawud Al Abadi
Secretary of the International Islamic Fiqh Academy

BISMILAHI AR-RAHMAN AR-RAHEEM

STATEMENT FROM THE INTERNATIONAL ISLAMIC FIQH ACADEMY TO ENCOURAGE VACCINATION AGAINST POLIO

All praise be to Allah. May the peace and blessings of Allah be on the messenger of Allah, our master Muhammad and on all his family members and companions.

The Secretariat of the International Islamic Fiqh Academy (IIFA) has seen the content of the resolutions adopted at Organization of the Islamic Conference sessions at the levels of leaders, presidents and ministers of health, with the aim of eradicating polio and raising awareness among Muslims on the need to be free from the disease, in addition to the benefits of vaccination against the disease, as well as its danger, as seen in the thousands of children who have been affected and have thus been exposed to various forms of physical handicap.

Based on the clarifications sought by the General Secretariat of the Organization of the Islamic Conference as contained in its Note to the IIFA number OIC/ST-16(19)/2009/004060 dated 11 July 2009, and in support of the efforts being made to eradicate polio through the ministries of health in member states and in collaboration with relevant authorities;

Having considered the reports issued by specialized medical agencies, the IIFA wishes to explain that vaccination against polio has been proven to be a useful and common practice, and received by all children of the world, whether from the east or from the west. Those reports have confirmed that vaccination campaigns have been successful by the grace of Allah in lowering the spread of disease among children in the Muslim world by more than 25%. The reports also indicate that failure to vaccinate in some countries has led to hundreds of children being infected with polio. Furthermore, it has led to the virus being transmitted by travelers to neighbouring Muslim countries. According to the reports, intensified campaigns in outlying regions can produce more positive results, even though they warn that the campaigners are facing serious difficulties in convincing some parents who, due to misunderstanding, perceive vaccination as a cause of infertility among girls. After having ascertained from trusted medical specialists that these are

unfounded rumours, the ministries of health in Islamic countries are convinced that those vaccinations are free of any harm.

Bearing in mind the danger of this disease on children and that it is a contagious disease which spreads among children in various ways, and when a child is affected by the disease, it remains with him for the rest of his life, handicapped and requiring special and continuous care; he may also be dependent on others; the disease could also cause him psychological and social injury.

The International Islamic Fiqh Academy calls on the relevant agencies in the ministries of health in Muslim countries to carry on the campaigns for vaccination against the disease. It also calls on parents to vaccinate their children against it, as a matter of urgency for the following reasons:

I – Allah has been gracious to mankind, having created him in the best of forms. Allah says in the Qur'an; **((We have indeed created man in the best of moulds))** *Qur'an, Chapter 95 Verse 4.* Allah also praised His prophet Zakariyya (P.B.U.H.) when he prayed to Allah for good offspring. Supplication for good offspring includes physical wellbeing and soundness. Allah says: **((There did Zakariya pray to his Lord, saying: "O my Lord! Grant unto me from Thee a progeny that is pure: for Thou art He that heareth prayer!))** *Qur'an, Chapter 3 Verse 38.*

II - Allah makes it compulsory for human beings to safeguard and maintain the soundness of their bodies and to avoid as much as possible all that could harm the body. Allah says: **((...and make not your own hands contribute to (your) destruction; but do good; for Allah loveth those who do good.))** *Qur'an, Chapter 2 Verse 195.*

Allah also prohibits man from killing his children through any form of killing, which includes nonchalance about what could harm them. Allah says: **((Kill not your children for fear of want: We shall provide sustenance for them as well as for you. Verily the killing of them is a great sin.))** *Qur'an, Chapter 17 Verse 31.* Thus safeguarding and preserving life from anything that could imperil it is one of the emphatic duties of the Islamic Sharia. Allah says:

((On that account: We ordained for the Children of Israel that if any one slew a person - unless it be for murder or for spreading mischief in the land - it would be as if he slew the whole people: and if any one saved a life, it would be as if he saved the life of the whole people.)) *Qur'an, Chapter 5 Verse 32.*

This reiterates the established rule in the Sharia of prohibiting the initiation or return of harm in all its forms. This is the text of a prophetic tradition narrated by Ibn Abbas saying: The Messenger of Allah (May the peace and blessings of Allah be upon him said: *There shall be no harming of one another neither in the first instance or in return.* Reported by Imams Ahmad in his *Musnad,* Hakim in his *Al-Mustadrak,* among others.

III - Islam encourages man to seek the means of power and to take up whatever could be beneficial to him. Abu Huraira, May Allah be pleased with him narrated: The messenger of Allah said: *The strong believer is better and more beloved to Allah than the weak Muslim, and in all that is good seek that which will benefit you...* Reported by Muslim in his authentic collection under the chapter: *Instruction to seek strength and to shun lethargy and dependence.*

IV – Islam has placed a heavy responsibility on parents towards their children, both boys and girls, especially those who are yet to attain maturity. Many prophetic traditions have been reported in this regard, including:

- The narration by Abdullah Ibn Umar (May Allah be pleased with both of them) who said: I heard the Messenger of Allah saying: *"Each of you is a shepherd and responsible for his flock; the Imam is a shepherd and responsible for his flock; the man among his family is a shepherd and responsible for his flock; the woman in her husband's house is a shepherd and is responsible for her flock."* Reported by Bukhari and Muslim.

- Abdullah Ibn Umar narrated: I heard the Messenger of Allah saying: *"It is enough a sin for a man to lose someone under his sustenance."*

V – Many traditions have been reported concerning encouragement to seek treatment and all means of cure and remedy including the one narrated by Abu Huraira, may Allah be pleased with him from the Prophet (Peace and Blessings of Allah be Upon Him) Allah has not created any ailment except He

also created its remedy, reported by Bukhari under the chapter: [Allah has not created any ailment except He also created its remedy]. In another narration by Usama Ibn Sharik, may Allah be pleased with him, he said: I came to the Prophet Peace and Blessings of Allah be Upon Him and his companions and found them transfixed as if birds have patched on their heads, I greeted them and sat down, then nomadic Arabs came from here and there saying: O messenger of Allah, can we seek healing and he replied: "*seek cure for Allah has not made any ailment without a cure except senility.*" Reported by Abu Dawud, Tirmidhi and Ahmad.

VI – Vaccinating children against polio is a preventive treatment against the disease that is feared before it strikes, which in contemporary times is termed preventive medicine. Islam recognizes this principle and, in this regard, the Prophet was reported to have said: *"Whoever eats 7 of Madina dates, first thing in the morning will not be harmed by magic or poison."* Reported by Bukhari under the chapter: Cure with Al 'Ajwa. He also endorsed same through reports on the rules of quarantine during *plagues. The Prophet said: "If you hear of a plague in a place, do not go there; and if it occurs where you are, do not leave such a place."* Reported by Bukhari under the chapter on plague.

Islam calls for the utilization of research and scientific accomplishments that make life easy for mankind...Islam has come to achieve the good and happiness of man in this world and the hereafter. Allah says: **((Ask people of knowledge, if you do not know))**. Qur'an, Chapter 16 Verse 43. Allah also says: **((We have sent you only as mercy to the world))**. Qur'an, Chapter 21, Verse 107.

VII – Prevention of disease through vaccination is not a negation of trust in Allah, just like prevention of hunger, thirst, heat and cold with their opposites cannot negate trust in Allah. Indeed, real trust in Allah cannot be achieved except by embracing the apparent causes which Allah has designed, by destiny or by law, as requirements to produce effects. Thus, not giving vaccination could be a prohibition if it causes harm.

Based on the foregoing, the International Islamic Fiqh Academy Secretariat hopes that ministries of health in member states would intensify their efforts to eradicate polio. It also hopes that parents and guardians would respond to the campaigns with a view to providing all that can be of benefit to their children

and avoiding everything that can harm them. It also hopes that religious scholars and mosque leaders would urge people to respond to those campaigns and encourage them to vaccinate against this disease.

May the peace and blessings of Allah be on our master, Muhammad and all his family members.

Professor Dr. Abdul Salam Dawud Al Abadi
Secretary, International Islamic Fiqh Academy

Jeddah, 18 Shaaban 1430H
09 August 2009

MUK-240809 IIFA

WHO Report on Consultation with Islamic Scholars 2013

Summary report on the
Consultation with Islamic scholars on polio eradication
Cairo, Egypt
6–7 March 2013

Document WHO-EM/POL/404/E

Contents

1. Introduction

A consultation with Islamic scholars on polio eradication was held in Cairo, Egypt on 6–7 March, 2013, with the participation of Islamic scholars and Muslim intellectuals from different countries. The objective of the consultation was for Islamic religious and technical leaders from countries of the region to brainstorm the best strategies to demonstrate solidarity across the Islamic world to ensure the protection of Muslim children against polio.

The meeting was opened by Dr Abdallah Al-Hussaini from Al-Azhar, who delivered the speech of the Grand Imam of Al Azhar. The Grand Imam, in his message, stressed the importance that Islam places on community prosperity and safety, especially for children, as the best guarantee of a better future for the Muslim community. Islam strongly advocates for children's rights and recognizes the right to life as supreme. From this perspective, to ensure the protection of life and health through the prevention of communicable diseases, including vaccine-preventable diseases, is a key value. Islam therefore strongly condemns whoever tries to prevent a child from accessing this basic right, including parents and community leaders, he said.

Dr Ala Alwan, WHO Regional Director for the Eastern Mediterranean, also welcomed participants and noted that we are at a historic crossroads when, for the second time only, humankind is poised to completely eradicate a disease from the face of the earth. Polio disease, which once paralysed an estimated 1000 children daily throughout the world, has now been brought to the brink of eradication by the development of a very safe vaccine. The Global Polio Eradication Initiative, launched by health ministers during the World Health Assembly of 1988, has been successful in achieving a 99.9% decline of the disease in the world. The disease now needs to be eradicated in three remaining countries: Afghanistan, Nigeria and Pakistan.

Through this effort, more than 10 billion doses of oral poliovaccine (OPV) have been administered to more than 2.5 billion children worldwide, almost a quarter of whom are Muslim children. More than 10 million people are walking today who would otherwise have been paralysed.

Recent lethal outbreaks in countries that had stopped polio, such as China, Congo and Tajikistan, remind the global community of the deadly consequences of failing to complete polio eradication. Concerned by

the consequences of failure after so much progress, the World Health Assembly declared in May 2012 the completion of polio eradication an emergency for global public health and called for a marked increase in the intensity of eradication activities in the high-risk areas of the three remaining polio-endemic countries.

Thanks to intensified work last year, 2012 witnessed the lowest number of polio cases in children ever in history. Globally, 222 children were reported to suffer from polio, a 66% decline compared with 2011. In two of the endemic countries, Pakistan and Afghanistan, 65% and 42% fewer children, respectively, suffered from polio as compared with 2011. In Nigeria, however, the number of children affected by polio doubled in 2012.

Concerned that polio still persists in these three countries, and knowing that polio travels long distances very easily and threatens children everywhere, the Ministers of Health of the 23 countries of the Eastern Mediterranean Region, during the 2012 Regional Committee, expressed concerns about the situation of polio in Afghanistan and Pakistan, and requested the Regional Director to better understand the technical, social and political barriers to polio eradication in these two countries. The Regional Office has a history of, and a unique mandate for, developing consensus and guidance when advances in medical technology or public health initiatives create controversies or dilemmas that must be reconciled with the Islamic sharia.

The aims of this consultation, supported by Al Azhar, one of the leading academic institutions in the Muslim world, were therefore to explore the ways by which the guidance of religious scholars can help to reach a consensus on how to end polio in the three remaining countries. These countries face a complex web of security challenges, militancy and violence (such as the recent killings of local health workers in Nigeria and Pakistan), which create an environment in which religious sentiments can be exploited, weakening community trust and creating a climate of fear. Ultimately, this results in children remaining unvaccinated and more cases of polio paralysis.

The Muslim ummah urgently needs guidance and a consensus among its leaders on how to navigate these controversies, with their misinformation and conflicting information. There is a pressing need for visible solidarity among Islamic scholars and the political and traditional tribal and community leadership. Muslim communities and families need a united, clear and knowledgeable voice that calls for the protection of all children from polio paralysis, a voice that clearly addresses misinformation and counters false propaganda about the nature of the vaccine and the polio eradication programme.

Before the meeting, participants were received by Dr Ahmed El-Tayeb, Grand Imam of Al-Azhar, who welcomed them and highlighted the responsibilities and accountability of the Muslim ummah in terms of protecting the health of children. He expressed Al-Azhar's strong condemnation of the recent killings of health workers in Pakistan and Nigeria, and stressed that Islam strictly prohibits any attempt to prevent children from accessing their basic rights, including health and the prevention of disease and disabilities. He emphasized the critical importance of immunizing children against polio and noted that Al-Azhar intended to issue a statement in this regard soon after the consultation.

2. Summary of discussions

There was consensus that Islam prohibits doing harm to oneself or others, and places an obligation to prevent harm. In particular, parents must protect their children from disease. Health was affirmed as a key Muslim value and seeking for cure as obligatory for all Muslims.

It was agreed that the polio vaccine is safe, effective and in accordance with Islamic law, and that immunization is a religious and social responsibility for everyone. Indeed, preventing immunization is forbidden by Islam. It was further noted that polio eradication, using the same vaccine and the same strategy, had been successful in the vast majority of Muslim countries, as well as in most parts of Afghanistan, Nigeria and Pakistan.

The context of conflict in the three countries, creating a climate of mistrust and fear, was acknowledged. It was felt that there is a need to build and restore trust with communities for their active participation in the effort to save their own children from this crippling disease. At the same time, health programmes should never be used as a cover for military intelligence-gathering purposes. The important role of religious leaders and institutions in supporting polio eradication was noted, including during the planning and implementation of vaccination campaigns and the utilization of mosques in addition to other vaccination points/strategies. The significance of, and need for, a common stance and voice on the part of Islamic leaders and institutions was highlighted.

The effective dissemination of Islamic rulings and information was suggested, along with the training of imams. The need to hold meetings on polio vaccination with Islamic scholars in each of the three countries, at both the national and local level, was emphasized. The potential role of Al Azhar in supporting polio eradication was emphasized, including the issuing and dissemination of religious opinions, curricula development, training of imams, and through envoys and its network of graduates. The International Islamic Fiqh Academy and the Federation of Islamic Medical Associations (FIMA) with its extensive network of Muslim medical personnel in countries,

expressed full support and the Organization of Islamic Cooperation (OIC) reaffirmed its commitment to polio eradication.

There was unanimous agreement that monitoring and responding to false claims and misinformation on polio vaccination in the media is of crucial importance. Targeted education campaigns are needed to explain Islamic teaching on polio vaccination, using accessible and easy to understand language. Facts on the safe and halal use of the polio vaccine need to be disseminated to all communities where polio transmission still exists.

The creation of a high-level Islamic advisory group was recommended by scholars who requested the development of a proposal and terms of reference for this group. It was envisaged that the group would be led by Al Azhar, in coordination with the International Islamic Fiqh Academy, and that UNICEF and WHO would provide a facilitative and supportive role.

3. Conclusions

- There is consensus that the Muslim ummah faces a serious problem of persistent polio that threatens all Muslim children and children throughout the world.
- The scholars expressed concern about the prevalence of rumours and misinformation regarding polio vaccination in the name of Islam.
- The scholars reached a common understanding about the reasons why poliovirus still circulates in some Muslim communities.
- The scholars expressed a strong commitment to achieve a polio-free Islamic world by end 2014.
- Protection of children against polio is a collective responsibility of Islamic societies and their religious, health and political leaders.
- Vaccination of children to protect them from polio is a religious obligation of all Muslim parents.
- The scholars agreed that Islamic religious leadership and institutions have a crucial responsibility to support eradication of polio.
- There is consensus among scholars that the polio vaccine is safe and does not contain any haram or harmful substance and does not cause infertility.
- The scholars emphasized that there is an urgent need to rectify misconceptions about the polio eradication programme and polio vaccine.
- The killing of health workers who vaccinate children is completely against the teachings of Islam and is strongly condemned.
- The participants strongly condemn the use of health interventions in intelligence collection and requested WHO to emphasize that all countries of the world should not use any health intervention for any other purpose than the promotion of health and prevention of disease.

4. Recommendations

1. An Islamic advisory group (IAG) should be constituted to build ownership and solidarity for polio eradication across the Muslim ummah under the leadership of Al Azhar in collaboration with the International Islamic Fiqh Academy; technical and secretariat support will be provided by WHO and UNICEF.
2. A task force should be formed with representation of key stakeholders to formulate the terms of reference and modus operandi for the proposed advisory group by 14 April 2013.
3. Under the guidance of the IAG, meetings of national and international scholars should be convened soon in the three polio-endemic countries in consultation with the national governments.
4. International and national religious institutions should actively participate in the implementation of the polio eradication campaigns in the three endemic countries; joint field missions should be organized in collaboration with key Islamic institutions and organizations.
5. Recognizing the concern about the rampant misinformation on polio vaccination being circulated in the name of Islam, the religious and technical leadership at all levels should monitor, assess and respond effectively to rumours about polio vaccination in coordination with the IAG.
6. As part of the secretariat function of WHO and UNICEF to the IAG, the two agencies should organize relevant technical information with guidance from religious scholars that addresses the concerns of communities and local religious community leaders.
7. Appropriate information on polio vaccination should be disseminated widely, especially to all imams, religious leaders and institutions, and relevant media, using effective dissemination mechanisms.
8. Polio-related information and fatwa should be disseminated to all parents and communities, particularly those who visit primary health units and health facilities, in easy to understand language.
9. Religious leaders and institutions should collaborate closely with the polio eradication programme in planning effective and appropriate strategies to reach children in the three endemic countries.
10. The IAG should seek to link with all Muslim humanitarian and professional organizations and bodies for active involvement in immunization.

FIMA Cairo Declaration for Polio Eradication 2013

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Cairo Declaration for Polio Eradication
Federation of Islamic Medical Associations (FIMA)

February 28, 2013, Cairo, Egypt

We, the Federation of Islamic Medication Associations;

Recalling the Resolution of the Organization of the Islamic Conference at the Third Islamic Conference of Health Ministers in October 2011 calling for high-level support for polio eradication; and, the Resolution adopted by the World Health Assembly in May 2012, declaring the completion of polio eradication a programmatic emergency for global public health;

Noting that polio is now at the lowest levels ever since records began; and, recognizing the historic opportunity to eradicate polio ensuring that no child will ever again be crippled or die from this disease;

Recognizing and that only three Muslim countries remain endemic to the disease and that national polio emergency action plans have been launched in all three countries to rapidly interrupt the remaining chains of wild poliovirus transmission;

Noting with grave concern the ongoing transmission of wild poliovirus in parts of Afghanistan, Nigeria and Pakistan, and remaining political, cultural, security and religious obstacles preventing all children in these areas to be vaccinated against polio; and in particular, the tragic and deadly attacks against frontline health workers in parts of Pakistan in December 2012;

Noting that in a country, polio eradication efforts require the full engagement of political and religious leaders, civil society organizations, medical fraternity and all stakeholders to gain access to and vaccinate every last child;

Recognizing the potentially devastating and deadly consequences of not eradicating polio, that may result in large polio outbreaks and the strategic importance of the Eradication and Endgame Strategic Plan by the Global Polio Eradication Initiative (GPEI) to reach and sustain eradication by 2018;

Noting the strong global commitment to eradicate polio and the extraordinary investments made by governments, funding partners and stakeholders but acknowledging that the realization of a polio-free world is currently jeopardized by an ongoing global funding gap;

Hereby call on:

1. All Islamic religious and community leaders to provide a strong message of support for polio eradication activities and the need to ensure all children are fully immunized against polio and all other vaccine-preventable diseases;

2. All levels of political, religious and civil society in Muslim countries to overcome any remaining cultural, religious, political and security obstacles currently preventing all children from being reached and immunized against polio and all other vaccine-preventable diseases;

3. All political, religious and civil society leaders to ensure the safety and security of frontline health workers, to enable them to perform their heroic tasks;

4. All governments in Muslim countries to prioritize and mobilize the necessary financial resources to enable the full implementation of all polio eradication strategies;

5. All affiliates of FIMA in their respective countries to be active partners of the Global Polio Eradication Initiative, providing leadership towards the creation of a world free from polio for all our children.

GPEI Scientific Declaration on Polio Eradication 2013

Scientific Declaration on Polio Eradication

Polio is a highly infectious disease that can cause irreversible paralysis and death. Today, the disease mostly affects children living in some of the world's poorest and most marginalized communities. Yet we are closer than ever to a world where no child will ever again be crippled or die from this disease. At this unique moment, an international group of scientists has come together to stress the achievability of polio eradication and endorse the Eradication and Endgame Strategic Plan, a new strategy by the Global Polio Eradication Initiative (GPEI) to reach and sustain eradication by 2018. The plan was developed in consultation with a range of technical experts, governments, funding partners and stakeholders and received unanimous support from the WHO Executive Board in January 2013.

Whereas,

1. Unprecedented progress, scientific advances and new tools give us confidence that eradication is achievable.

- New cases of wild poliovirus have dropped from an estimated 350,000 cases in more than 125 countries in 1988 to fewer than 250 cases in just five countries in 2012.
- 2012 was a turning point for the remaining endemic countries. Nigeria, Afghanistan and Pakistan launched national emergency action plans that resulted in significant improvements in immunization campaign quality and the fewest new cases on record.
- India stopped wild poliovirus transmission in 2011, proving that polio can be eliminated in the most challenging circumstances.
- Two effective vaccines have protected hundreds of millions of children against the disease: oral polio vaccine (OPV) and inactivated polio vaccine (IPV). The worldwide elimination of one of the three types of wild poliovirus (type 2) more than a decade ago proves that eradication through the polio eradication strategy is feasible.
- We have successful strategies to deliver vaccines and monitor coverage, strong surveillance to quickly detect and contain the virus, and innovative technologies and approaches such as geographic information system (GIS) mapping and new vaccine formulations to ensure that children are reached and protected.

2. The new Strategic Plan provides a clear path forward that capitalizes on this historic opportunity to end polio.

- The plan is a long-term, comprehensive strategy to complete and sustain eradication. The plan's strategies are sound and, when implemented, will interrupt transmission, sustain eradication and maximize post-eradication benefits.
- The plan is a significant step forward over previous eradication strategies and offers strong solutions to challenges by including:
  1) Data-driven strategies to overcome operational challenges—including missed children—to ensure high quality immunization campaigns that can interrupt transmission globally; and
  2) Plans to eliminate both wild poliovirus and vaccine-derived poliovirus, starting with the withdrawal of type 2 from OPV and introduction of IPV in all countries to boost immunity to remaining strains.
- Insecurity in endemic countries is a serious threat to the program. To overcome this challenge, the GPEI will improve coordination between civilian and security services, increase community demand for vaccination services, enhance advocacy efforts by religious leaders and institutions, and increase vaccinations in areas bordering insecure places to reduce spread of the disease.

3. The new plan emphasizes the urgency of improving routine immunization systems and lays a foundation to protect children against other diseases.

- The plan recognizes that eradication efforts are interdependent with strengthened routine immunization. High levels of routine immunization are needed to achieve and sustain polio eradication.

1

At the same time, eradication efforts demonstrate that it is possible to reach nearly every child, even in the most underserved and remote areas, with vaccines and other life-saving interventions.

- The Strategic Plan calls for GPEI to use its robust infrastructure to benefit routine immunization and other health programs. It includes strategies for polio eradication staff and processes to help strengthen routine immunization, in partnership with national immunization programs and the GAVI Alliance and in alignment with the Global Vaccine Action Plan.
- Eradication would demonstrate that worldwide collaborations can successfully combat complex health threats, including in remote communities too often left behind.

4. Scaling back efforts would have devastating consequences.

- For polioviruses to survive, they must be transmitted from infected persons to susceptible persons in a continuous chain of human-to-human transmission. When immunity levels are high, the chains are broken. Today, there are fewer chains than ever before, creating an unprecedented opportunity to stop transmission.
- Weakening our efforts would lower immunity levels, setting the stage for a resurgence of outbreaks. Polio is highly infectious and spreads quickly. If we aim for control rather than eradication—relying only on routine immunization to vaccinate against polio and eliminating mass vaccination and other eradication strategies—we can expect up to 200,000 cases annually.

We, members of the scientific community, declare our conviction that the eradication of polio is an urgent and achievable global health priority. We endorse the Eradication and Endgame Strategic Plan and call on actors in the global community to do their part to ensure the full implementation of the plan. We urge:

- **Scientists to develop new and better tools to accelerate and sustain eradication,** including low-cost IPV options, and to continue providing technical support to endemic countries.
- **Partners, including GPEI and vaccine manufacturers, to ensure sufficient supply of and access to different types of vaccines required for eradication,** including IPV use in resource-poor countries.
- **Endemic country leaders and international program officials to stay fully committed and accountable to stop transmission.** They can build on emergency plans to increase accountability and strengthen campaign quality. They can continue to develop regional- and community-specific solutions to bottlenecks such as vaccine refusals.
- **Endemic country governments and partners to strengthen security measures and deepen engagement with community and religious leaders** to promote demand and protect vaccination teams and volunteers, in light of recent attacks on health workers across Pakistan and Nigeria.
- **International partners and national programs to strengthen linkages across polio vaccination efforts, routine immunization and other initiatives,** including measles prevention, maternal and child health and nutrition, to address the broad health needs of communities.
- **Partners, and national and global programs, to commit to strengthen routine immunization** with the same urgency, robust technical and financial support and clear measurement indicators.
- **Partners to fully fund the Strategic Plan.** Funding gaps in 2012 led to cancelled and scaled-back vaccination campaigns in 24 countries, leaving children in these areas more susceptible to polio.
- **Civil society to continue to support efforts to end polio forever.**

Polio eradication can be our generation's legacy to all future generations. Only working together can we make history and end polio.

For more information about the declaration and for a full list of signatories, please visit http://vaccines.emory.edu/poliodeclaration/

Joint Press Conference Malaysia Ministry of Health (MOH) and JAKIM 2014

KENYATAAN AKHBAR BERSAMA
KETUA PENGARAH KESIHATAN MALAYSIA DAN
KETUA PENGARAH JABATAN KEMAJUAN ISLAM MALAYSIA

PENJELASAN TERHADAP
KERAGUAN SUNTIKAN VAKSIN (IMUNISASI)

1. Kementerian Kesihatan Malaysia (KKM) dan Jabatan Kemajuan Islam Malaysia (JAKIM) menyedari ada di kalangan ibubapa yang agak khuatir dan ragu-ragu untuk memberikan suntikan vaksin atau imunisasi kepada bayi mereka ekoran daripada berita-berita dan khabar angin yang tersebar luas di media baru yang mengatakan bahawa vaksin mengandungi bahan-bahan haram dan membahayakan yang boleh mengancam kesihatan dan nyawa manusia. Juga turut disebarkan ialah program imunisasi yang dijalankan oleh Kerajaan adalah bertujuan untuk melemahkan umat Islam. Semua berita yang tersebar ini dilakukan oleh mereka yang tidak bertanggungjawab dan sebenarnya boleh mendedahkan anak-anak dan masyarakat kita dengan kemungkinan dijangkiti penyakit-penyakit merbahaya yang boleh mengancam nyawa.

2. Program Imunisasi Kanak-Kanak Kebangsaan telah dijalankan oleh Kerajaan sejak tahun 1950an. Imunisasi bertujuan untuk mencegah 12 jenis penyakit berjangkit disebabkan oleh bakteria dan virus tertentu, diberikan percuma kepada bayi dan kanak-kanak di klinik kerajaan. Kematian kanak-kanak telah menurun sebanyak 85% bagi tempoh 1970 hingga 2000, antaranya hasil dari peningkatan skop perkhidmatan kesihatan termasuk imunisasi. Imunisasi juga telah berjaya membasmi cacar (*smallpox*) dari dunia ini. Manakala polio telah berjaya dibasmi di kebanyakan negara di dunia, termasuk Malaysia. Imunisasi bukan saja melindungi penerimanya tetapi juga menghalang penyebaran penyakit tersebut.

3. Vaksin tidak mengandungi bahan-bahan yang boleh merosakkan tubuh manusia. Ia mengandungi bahan aktif dari bakteria atau virus iaitu antigen yang membantu

tubuh manusia menghasilkan antibodi untuk melawan penyakit apabila dijangkiti. Vaksin juga mengandungi komponen lain seperti bahan pengawet (*preservatives* dan *additives*) serta *adjuvant*. Setiap komponen dan bahan ini memainkan peranan penting dalam pengawalan kualiti, keberkesanan vaksin serta keselamatannya.

4. Semua vaksin yang digunakan oleh Kementerian Kesihatan Malaysia (KKM) adalah berdaftar dengan Pihak Berkuasa Kawalan Dadah (PBKD). Vaksin-vaksin ini telah dinilai mengikut keperluan piawaian antarabangsa termasuk Pertubuhan Kesihatan Sedunia (WHO) dari aspek kualiti, keselamatan dan keberkesanannya (efikasi).

5. Kesan sampingan akibat imunisasi selalunya adalah ringan dan tidak berbahaya berbanding dengan kesan jangkitan penyakit itu sendiri. Kesan sampingan yang kerap dilaporkan adalah demam dan sakit di tempat suntikan. Pusat Pemonitoran Kesan Advers Ubat Kebangsaan, Biro Pengawalan Farmaseutikal Kebangsaan, KKM sentiasa memantau kesan sampingan akibat imunisasi di semua fasiliti kesihatan. Sehingga kini, tiada tindakan regulatori terhadap vaksin akibat kesan sampingan.

6. Sebarang kesan sampingan akibat vaksin juga dilaporkan kepada WHO dan data dikongsi dengan semua negara. Justeru, sebarang kesan sampingan berbahaya dapat diambil tindakan secara bersepadu pada peringkat antarabangsa.

7. Sekiranya terdapat sebarang keraguan atau sebarang kesan sampingan selepas imunisasi, masyarakat boleh membuat laporan kepada mana-mana ahli profesional kesihatan atau terus kepada Biro Pengawalan Farmaseutikal Kebangsaan melalui talian 03 - 7883 5400 atau emel ke bpfk@bpfk.gov.my.

8. Dari aspek pandangan syarak pula, imunisasi merupakan satu jalan pencegahan. Pencegahan adalah perkara yang amat dituntut dalam Islam sesuai dengan kaedah Usul Fiqh iaitu سد الذريعة .

9. Al-'Aili Abdul Hakim dalam buku *Mausu'ah Huquq al-Insan fi al-Islam*, menyifatkan kesihatan individu merupakan tuntutan agama dan kehidupan, di mana ia akan memberi manfaat kepada kehidupan seluruh umat manusia. Dalam isu ini, vaksin bukan lagi merupakan kehendak seseorang, tetapi bahan pencegah ini kini menjadi keperluan kepada masyarakat secara umumnya.

10. Fenomema ibubapa enggan memberikan suntikan vaksin kepada anak-anak mereka di klinik-klinik adalah amat membimbangkan. Perbuatan ini bukan sahaja merbahaya kepada anak-anak yang merupakan generasi masa depan kita, tetapi juga boleh menjadi punca merebaknya jangkitan penyakit-penyakit merbahaya tersebut.

11. Dalam hal ini Islam amat menitikberatkan keselamatan umat manusia. Sesuatu perkara yang hendak dilaksanakan untuk maslahah ummah hanya diperakukan oleh syarak sekiranya tidak bercanggah dengan *Maqasid Syar'iyyah* iaitu menjaga agama, nyawa, aqal, keturunan dan harta. Menurut fuqaha', sebarang penyakit perlu dihindari, dirawat dan diubati. Dalam konteks ini pencegahan daripada sebarang bentuk gejala yang boleh menjejaskan kesihatan dan nyawa adalah menjadi pegangan dan keutamaan ajaran Islam.

12. Imunisasi adalah satu cara pencegahan yang dapat dilakukan bagi mengelakkan penyakit-penyakit merbahaya yang mengancam nyawa khususnya kanak-kanak seperti campak, tibi, batuk kokol, difteria, tetanus atau polio. Penggunaan vaksin dalam program imunisasi bagi mengelak bahaya penyakit-penyakit yang berkenaan adalah diharuskan oleh syarak selaras dengan *Kaedah Fiqhiyyah* iaitu درء المفاسد مقدم على جلب المصالح (Menolak Kerosakan Adalah Didahulukan Daripada Mencari Kemaslahatan) kerana sesuatu kerosakan akan cepat

berkembang dan bahayanya adalah lebih besar sekiranya tidak dicegah daripada awal. Keharusan ini juga adalah berdasarkan Firman Allah s.w.t dalam surah Al- Baqarah, ayat 195 yang bermaksud: *Dan janganlah kamu sengaja mencampakkan diri kamu kedalam bahaya kebinasaan.*

13. Islam memang pada dasarnya menegah penggunaan ubat dari sumber yang haram untuk mengubati sesuatu penyakit berdasarkan hadith Rasulullah s.a.w. yang bermaksud:

"Dari Abi Darda' RA, Rasulullah s.a.w. berkata: Sesungguhnya Allah telah menurunkan penyakit dan penawar, dan Dia telah menjadikan bagi tiap-tiap penyakit itu penawar, maka kamu semua berubatlah dan janganlah kamu semua berubat dengan (perkara-perkara) yang haram".

14. Walau bagaimanapun, dalam keadaan dharurat di mana tiada ubat lain yang boleh digunakan secara berkesan untuk mengubati sesuatu penyakit, sedangkan sesuatu penyakit itu perlu dicegah dan dirawat untuk memelihara kesihatan diri dan nyawa, ubat yang bersumberkan perkara-perkara yang ditegah adalah diharuskan selama mana tiada ubat lain dari sumber yang halal ditemui dan ianya dilakukan mengikut kadar yang diperlukan sahaja.

15. Berdasarkan ketetapan dan panduan syarak tersebut, Muzakarah Jawatankuasa Fatwa Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam Malaysia sejak dari tahun 1988 lagi telah mengeluarkan beberapa pandangan hukum yang berkaitan langsung dengan imunisasi yang seharusnya menjadi panduan seluruh umat Islam, antaranya Imunisasi Hepatitis B Menurut Islam, Pandangan Islam Terhadap Imunisasi Campak, Tibi, Batuk Kokol, Difteria, Tetanus Dan Polio, Ubat Pelalian Rubela (Imunisasi Rubela), Hukum Suntikan Pelalian Vaksin Meningococcal Meningitis Oleh Orang Islam, Hukum Penggunaan Vaksin Biothrax Dan Vaksin Rotateq Yang Menggunakan Unsur Babi Dalam Proses Penghasilannya, Hukum Pengambilan Vaksin Human Papilloma Virus (HPV) dan

Hukum Penggunaan Vaksin Meningitis Menveo. Maklumat-maklumat mengenai keputusan tersebut boleh diperolehi melalui Portal e-fatwa (www.e-fatwa.gov.my).

16. Sukacita pihak Kementerian Kesihatan Malaysia dan JAKIM menasihatkan seluruh masyarakat supaya tidak mudah terpengaruh dan percaya dengan berita-berita yang disebarkan dalam pelbagai saluran media oleh pihak-pihak yang tidak bertanggungjawab. Sekiranya timbul keraguan atau perlukan pengesahan, eloklah merujuk kepada pihak berkuasa supaya penyebaran isu-isu seumpama ini tidak menimbulkan kegelisahan kepada masyarakat seluruhnya.

Sekian, terima kasih.

DATUK DR. NOOR HISHAM BIN ABDULLAH
Ketua Pengarah Kesihatan Malaysia

DATO' HAJI OTHMAN BIN MUSTAPHA
Ketua Pengarah
Jabatan Kemajuan Islam Malaysia

Tarikh: 15 Jun 2013

15 May 2015

Immunisation: An Open Letter by 114 Malaysian Paediatricians

There has been an increased number of parents who have made a choice not to vaccinate their children. The implications of this action are far reaching and will impact the health of our children for years to come. As Consultant Paediatricians from all over Malaysia, in the government service, private or universities, we would like to share our concerns with parents.

It is important to note that there has been no public health or medical initiative that has changed the lives of children as much as vaccines. Yes, clean water supply, better economic and housing conditions have contributed significantly to health improvement. But vaccines have made major impact on disease transmission, especially in children. Millions of children worldwide have survived because of the introduction of immunisation programmes. In Malaysia we have seen the dramatic reduction in mortality and morbidity (sickness, death and damage to children), to the point where we hardly see serious illness like Polio or Tetanus except in the non-immunised communities like recent immigrants from less privileged countries. Thousands of Malaysian children have been protected over the years and we should be proud that our country has been regarded by the World Health Organisation as one with a very successful immunisation coverage.

But this is changing… As the anti-vaccine lobby gains ground, some parents are making the choice not to vaccinate their children. The impact of this decision is felt not only in their children alone, but also in the lives of other children who have not managed to receive their immunisation but came into contact with unvaccinated children with the illness. This month a 52 day old baby died of pertussis (or whooping cough) in Malaysia. Pertussis is a readily preventable disease but this baby was too young for the vaccine, which is given at 2 months of life. The decreasing community (herd) immunity, as a result of more parents omitting vaccines, has resulted in this baby losing the protection that we as a community could have given the child. This is not an isolated event. In addition some children also die or get seriously ill because they were not offered vaccination by their parents. With the loss of herd immunity, your child may potentially get infected now

or as an adult, or even get infected by their own children in the future.

Why are parents making this choice in the face of decades of successful immunisation programmes? There are a number of reasons.

Primarily it is the concern about side effects

Do vaccines have side effects? Of course they do. All medications and vaccine have risks of side effects. Some parents in reading about the side effects become worried about the safety of vaccines. However side effects need to be taken in context of the bigger picture. These side effects are less common than many day-to-day activities that we engage in. Vaccines are safer than most things in life, for example driving a car or a motorbike. More than 8,000 Malaysians will die from road traffic accidents in Malaysia this year. An additional 35,000 will get seriously damaged. This does not seem to stop Malaysians from driving. You are hundreds of times more likely to get a "side effect" or die from driving than from getting a side effect from a vaccine. Similarly getting any one of these vaccine preventable diseases will be more serious compared to the risk of vaccine side effects.

The loss of our historical memory/perspectives

Those of us, who are older in this group, remember the massive outbreaks we had for Diphtheria, of seeing many children die of tetanus or, of children being maimed by polio. This situation was very much akin to the current Dengue outbreaks that worry all Malaysians. As we control diseases better, the public loses memory of the devastating effects of these conditions on their families and the community. Hence the fear of side effects, rather than that of the infection to be protected from, become relatively more important. Of note, even as recent as two to three years ago, we were struggling with a large measles epidemic in some states in Malaysia due to reduced vaccine coverage. Similar measles outbreaks have also occurred, in the past few years, in developed countries like USA and UK due to falling immunisation rates.

Dubious practitioners

There are many dubious individuals, with titles of uncertain reliability, who claim to be experts, advising against vaccines. They argue for a "holistic" way of life and even suggest that natural infection to diseases is better for children than immunity through vaccination. We hope that parents will evaluate these individuals and their claims carefully. Most of these claims have no or minimal scientific basis/evidence.

False information & concerns

Some parents are reluctant to use vaccines as they have been given false information as to their content. They fear that vaccines contain foreign

proteins that may conflict with their religious beliefs. Others believe vaccines may have heavy metals like mercury or toxins that can cause autism. Vaccine production is a rigorous process and current vaccines used in children are safe. Numerous studies have clearly shown that there is no evidence to support any link between vaccines and autism.

We appeal to parents to protect all the children of Malaysia with the use of vaccines. It is important to remember that vaccines do not just protect your child, they protect all the children and susceptible adults (such as the sick and the elderly) that you and your child come in contact with.

For the sake of your children and ours, for the sake of all Malaysian children, we hope parents will support the use of vaccines. We extend blessings on your children and hope that we will always be available to serve the children of Malaysia. – May 15, 2015.

***This letter is signed by 114 government, private and university consultant paediatricians.**

"Immunisation had a profound positive effect on health. Lately, some have claimed unsubstantiated side effects and a few ulamas have prohibited their use. This caused some parents not to vaccinate their children, with significant deleterious effect on their health and society. This book gives accurate and comprehensive information on immunisation, including the religious basis for advocating universal vaccination. For this, the authors are to be commended."
- Prof Hossam E Fadel, Editor-in-Chief, FIMA Year Book

"This publication is timely and thought-provoking. It covers an array of topics such as the history of immunisation, vaccine contents, ethics of immunisation and the Islamic perspectives on immunisation. I am confident that this publication will instill in Muslims renewed vigour to have their children immunised."
- **Professor Emeritus Abul Fadl Mohsin Ebrahim, School of Religion, Philosophy and Classics, University of KwaZulu-Natal, Durban, South Africa**

"Editors and authors of this reference book on immunisation must be congratulated for their sterling efforts and achievements. They have addressed significant issues on immunisation history, arguments, suspicions, scientific evidence, ethical aspects, with elucidation of Islamic Jurisprudence standpoints which are instrumental in enlightening the public, and to call upon religious, medical and community leaders to exercise their expected roles to safeguard human health and minimise tragedy and agony."
- Dr Aly A. Misha'l MD, FACP, Executive Director, Federation of Islamic Medical Associations (FIMA),Amman, Jordan

"In this era of unlimited access to free information, society needs to be able to choose information critically from valid and reliable sources. This book is a great effort to serve the public with credible information about immunisation from various perspectives, much needed to clarify the issues surrounding immunisation. This is the definitive reference book for healthcare providers and the public alike."
- Dr Achmad Zaki, M. Epid, Sp. OT, IMANI President (2013-2016)

"*While immunisation had unequivocally proven its benefits and enhanced the health of children globally, it is strange to find that there are still those who are against it, especially in the Muslim community. This book is a must-read for all who seek the truth about immunisation as it focuses on various issues from different angles and perspectives. Congratulations to all the writers . May Allah open the hearts of the seekers of truth*."
- Prof Dato' Dr Abd Rahim Mohamad, IMAM President (2012-16)

IMAM
Islamic Medical Association of Malaysia

IMANI
Islamic Medical Association & Network of Indonesia

FIMA
Federation Of Islamic Medical Associations (FIMA)

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