

OCT
2019

**MSAI-UNESCO
BIOETHICS
UNIT:**

THE ANNUAL
BIOETHICS
NEWSLETTER



United Nations
Educational, Scientific and
Cultural Organization

UNESCO Chair
in Bioethics
University of Haifa

BIOETHICAE



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Meet the Unit!

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Foreword

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Greetings members,

Medical Students Association of India now enters the 4th year of the UNESCO and MSAI collaboration for the Bioethics unit. The leadership of Dr. Adit Desai, Dr. Nipun Nagpal and Dr. Hansel Misquitta along with mentorship of Dr. Russel has helped the unit grow from strength to strength.

The importance of the topic has always resonated with MSAI. As an organisation for medical students currently doing their graduation, we feel that it is our duty to sensitise them regarding the aspects of Bioethics.

We want to help students as they take their first step into this complex and multifaceted dimension. Debates, skits and other such competitions as a part of the World Bioethics Day have guided students to explore the nuances of the bioethical dilemmas.

We have been able to create platforms at various Local, State and National level where healthy dialogue is possible. Our Campus Ambassador project has been successful in spreading awareness about Bioethics in different colleges using peer to peer teaching program.

The reason MSAI Bioethics unit becomes special is that there is an opportunity for medical students to be involved in every aspect of the activity. As a part of our project 'Ethireel' we have been able to explain the basic principle using the medium of videography. This has enabled them to be a part of our upcoming National Campaign.

It always gives me immense pleasure to see students evolve as they steer through this diverse, challenging and yet so interesting work domain.

Cracks in the Pillars of Bioethics

Manali Sarkar, MGM Medical College, Navi Mumbai

Every doctor in the world has to follow the four pillars of bioethics before judging the viability of a procedure. While the answer to viability is usually straightforward, there are certain times where it can get convoluted and perplexing.

Firstly, we must define the four pillars of bioethics. These are autonomy, justice, beneficence, and non-maleficence. Autonomy is the basic right of the patient to make decisions about their medical care without any third party influence. Justice is a concept involving fairness, equality and equitable treatment of the patient and is further evaluated under four headings-fair distribution of scarce resources, competing needs, rights and obligations, and potential conflicts with established legislation. Beneficence refers to the action of the healthcare staff that promote the well-being of others. Non-maleficence means that the healthcare provider will cause no or least harm to a patient who is under the provider supervision.

Although the four pillars of bioethics have deemed most procedures viable, they are unable to give a satisfactory resolution to the controversy of euthanasia. Euthanasia is defined by Blackburn as the “action of causing the quick and painless death of a person, or not acting to prevent it when prevention was within the agent’s powers”. Euthanasia is further divided into voluntary, involuntary and non-voluntary.

For voluntary euthanasia the patient has to give consent before the undertaking of the process. Involuntary euthanasia is conducted against the wills of the patient. Non-voluntary euthanasia is when the procedure occurs without the consent of the patient but the consent of its guardians or relatives are given. Euthanasia is further divided into active and passive variants. In passive variant the treatment necessary for the sustenance of patient life is withdrawn, whereas the active variant entails the use of force or toxic substance (lethal injection, poison) to take the life of a patient.

On examining the case of euthanasia with the perspective of the four pillars, it is found that a patient has the full right to access euthanasia as he/she/they have autonomy over the procedure conducted on his/her/their body. Furthermore, if the patient is in grave suffering it is indeed beneficial to reduce said suffering by euthanasia. Unfortunately it is in legality and non-maleficence where the argument against euthanasia is made. Most countries consider euthanasia a crime. As of today only Netherlands, Belgium, Colombia, and Luxembourg allow euthanasia. Assisted suicide is legal in Switzerland, Germany, Japan, Canada, and in the States of Washington, Oregon, Vermont, Montana, and California.

In India, only passive euthanasia under strict guidelines (patients should consent through a living will, and must be either terminally ill or in a vegetative state) has been allowed since March 2018. Hence, the legality of euthanasia varies according to the country the patient is hospitalized in. The case of non-maleficence with euthanasia is even murkier as every doctor has to take the Hippocratic Oath of “do not harm” before practicing and euthanasia directly contradicts the Hippocratic oath.

The second question that the pillar of bioethics has been unable to solve is that of abortion. The definition of abortion is itself nebulous with various organizations, textbooks and dictionaries giving different definitions. In some cases it is defined as the termination of the fetus before it is viable whereas in other cases it is defined as the termination of a 20 week old fetus or if the fetus is delivered having a weight less than 500 grams.

On examining the case of abortion in relation to autonomy many bioethicists are stumped as to whether the autonomy of the fetus should be included as well as the mother and what gestational stage should the autonomy of the fetus be involved. Further questions arise as to whose bodily autonomy should be superseded when only the life of the mother or the fetus can be saved.

Like euthanasia, the legality of abortion varies from country to country. In India, abortion can be performed up to 20 weeks under the full supervision of the doctor. Only unexceptional cases are abortions allowed beyond 20 weeks, only with the permission from the court. In 2019, Alabama passed a law that outlawed abortion at any stage of pregnancy with no exceptions for pregnancy resulting from rape or incest; a direct opposition to the historic *Roe V Wade* landmark judgement. Considering the case of beneficence and non-maleficence, it is important to realize that when the fetus is endangering the mother’s life, may be the right way to go and perhaps the only option remaining to the mother. Abortion is controversial among Gynecologists and midwives due to the bio-ethical principle of “Do no harm” and “saving the patient without any or less pain”. Here again the question of who the patient is for whom beneficence and non-maleficence should be applied, the fetus or mother.

Another tricky question for the bioethicist is what a healthcare provider should do in cases where the patient refuses treatment for a life-threatening condition. The autonomy of the patient should always be maintained.

Thus, the patient has all right to refuse treatment or sign a DNR (do not resuscitate), but beneficence and non-maleficence state that the patient should be provided treatment to prevent further suffering and transmission of diseases to other hosts (if communicable).The legality of this is taken by the court on a case by case basis throughout the world depending on the nature and severity of the disease.

Hence, through the above examples it is very well proven that although the four pillars of bioethics are very important to define any procedure viability and severity, ,there are certain gaping holes in these pillars are unable to address. Bioethicists should thus take cognizance of this fact and have suitable changes or modifications to the existing pillars so that these dubious instances can be easily resolved without any debate or lingering questions.

Legality vs Ethicality

Sheenam Beg



Still , Stiff I lie

Wind through the creaked window was
flowing by

An alone girl but no fear this time
Surrounded by curious minds who could
only mime

In this butchery ,I had nothing to hide
for they themselves will find everything
right

Pondering over my life's tragedy,
On this very day , I could have been
bright ,red and so -made
But alas! I am declared as the worst
dressed by vogue critics
They couldn't find my mouth foam
magnetic.....

All these years what was I trying to
protect....modesty?
But he took over it so hastily
Happy as I could have ever been
Because people chose curiosity over
modesty; something I had never seen
How I wish that the world I left behind was
similar!

Legality vs Ethicality

Dr. Noor Gill,

Sri Guru Ram Das Institute of Medical Sciences and
Research, Amritsar.

“Where the art is medicine is loved,
there is
also love for humanity”

~Hippocrates

Legality, as defined by the Merriam Webster Dictionary is the quality or state of being in accordance to the truth. It is an obligation imposed by the law. Medical law is the branch of law which is concerned with the prerogatives and responsibilities of medical professionals and the rights of the patients and everyone involved in the medical system and administration, from the staff to the patients, from the doctors to the nurses.

Ethics on the other hand, are the moral principles that govern a persons behavior or how they conduct themselves. Ethic concern matters of value. It seeks to resolve questions of human morality by defining concepts such as good and evil, right and wrong, justice and crime, virtue and vice.

Bioethics is also about moral discernment as it relates to the medical policy and practice. It is concerned with the ethical questions that arise in the relationships among life sciences, biotechnology, medicine and medical ethics, politics, law and philosophy.

The second question that the pillar of bioethics has been unable to solve is that of abortion. The definition of abortion is itself nebulous with various organizations, textbooks and dictionaries giving different definitions. In some cases it is defined as the termination of the fetus before it is viable whereas in other cases it is defined as the termination of a 20 week old fetus or if the fetus is delivered having a weight less than 500 grams.

On examining the case of abortion in relation to autonomy many bioethics are stumped as to whether the autonomy of the fetus should be included as well as the mother and what gestational stage should the autonomy of the fetus be involved. Further questions arise as to whose bodily autonomy should be superseded when only the life of the mother or the fetus can be saved.

The law helps us differentiate between an emergent patient and one that is not in need of immediate care, it helps us prioritize between the two; but it is the ethics that help us make decisions like how long to spend on a patient if they are both equally emergent or non-emergent. It is a medical practitioners values that help him in reconciling his own values and those of his patients. When and where to refer or investigate, how to respect the patients confidentiality when dealing with worried relative and third parties. And all of these decisions require strong ethics and values as well as facts and evidence.

When any patient walks into our doors with an ailment or even with a complaint of one, we as healer need to keep in mind the values of primary care, which are:

- i. To deliver the best possible evidence based medical care to the patient.
- ii. To help prevent avoidable illnesses and death in our patients.
- iii. To help those who are or who believe themselves to be ill, to help them cope with their illnesses, whether real or feared, to the best of our abilities.

Medical ethics is a system of moral principle that apply values to the problems of clinical medicine and scientific research. It is based on a set of values that professionals can refer to in case of any confusion or conflict. Likewise, medical practitioners, advisors, caregivers or attendants can also turn to the law to look for facts and evidence in case of a controversy or emulation of values. Law and ethics are like a cloverleaf and such tenets allow the doctors, care providers and the families to create a treatment plan and work towards the common goal in the best interest of the patient.

Each situation that we come across as medical practitioners is different from the one we faced before. Each day different than the other. Each patient not the same as the last one. And when squared off with multiple yet such similar scenarios, how does one interpret the reality of their actual understanding of a concept that manifests itself through such different narratives painted by different individuals about the origin and meaning of the same concept.

The difference in narratives about the same set of facts is what divides us. An individual has the ability to frame or understand something very different than the next person. And this is where legality comes to play, in this gray area. Ethicality runs on a moral ground. What might be right for one might be premeditatedly alarming and wrong for another. Legality works on principles, substantiation and evidence laid down by the government to avoid such conflicts of conscience. But evidence doesn't always lead to a clear attribution of the cause and the means of an issue— meanings are derived from narratives. Reality and the facts that surround it are personally subjective and laden with assumptions based on clearly stated facts.

Our everyday experiences shape our understanding of the law and help us build principles on which we function. The law is clear, ascertainable and non-retrospective. And ethics always tend to take the moral high ground. Ethics and law are not identical. Typically, the law tells us what we are prohibited from doing and what we are required to do. The law sets the minimum standards of behaviour while ethics the maximum. But all this seems to be changing as the law tries to impose broader obligations in relation to medicine, biology and other related aspects such as with the doctors, nurses and patients duties towards oneself and one another and the best obligation for medical advice.

Many religious communities have their own histories of inquiry into this medical law and ethics issues and have developed rules and guidelines on how to deal with these issues from within the viewpoint of their respective faiths. In the case of many non-western cultures, a strict separation of religion from philosophy does not exist. And in many of these cultures there are lively discussions on bioethical issues and the legal aspect of it.

The National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research initially identified the basic principles that should underlie the conduct of biomedical and behavioural research involving human subjects, the fundamental principles namely- respect for persons, beneficence and justice have influenced the thinking of bioethicists across a wide range of issues. Others have added non-maleficence, human dignity and the sanctity of life to the list of cardinal values.

Ethics affect medical decisions made by health care providers and patients. But ethical behaviour is not always defined within the confines of the law.

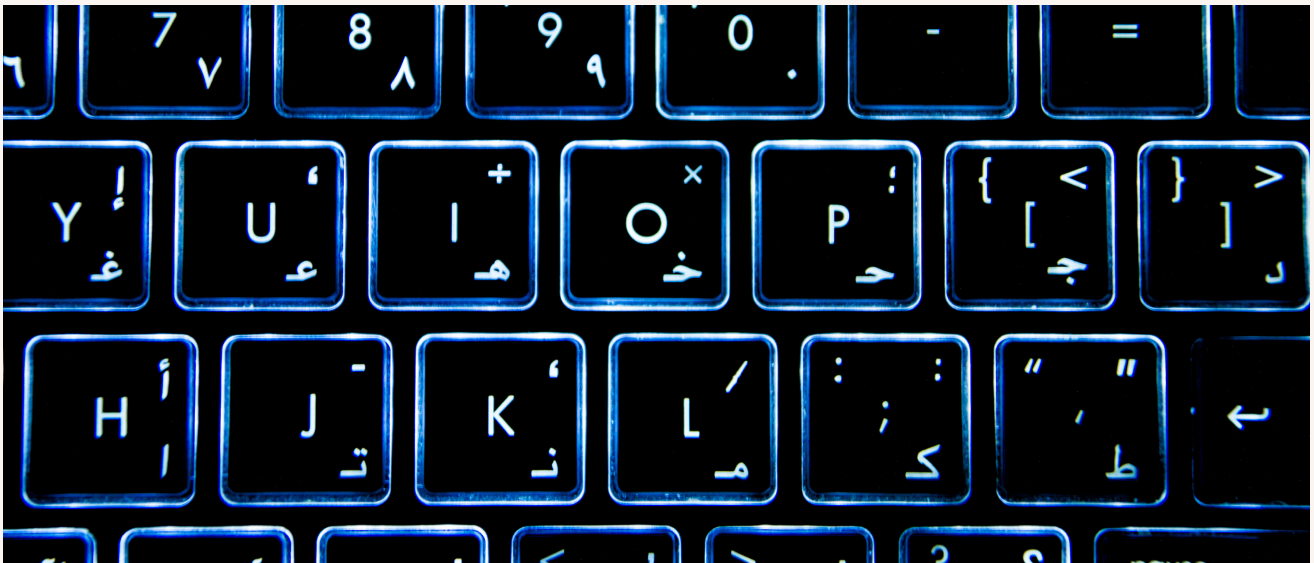
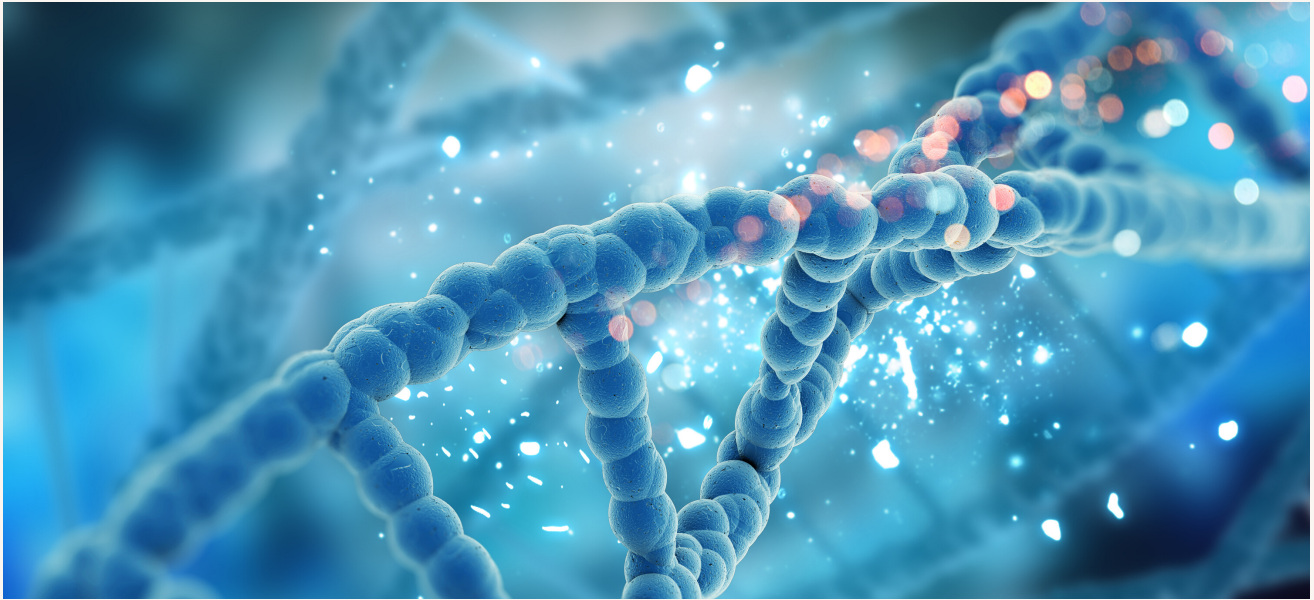
Medical techniques like gene editing aiming at treating, preventing and curing diseases, utilising gene editing, abortions and euthanasia, cloning, life extension, surrogacy and allocation of scarce health care resources such as organ donation, health care rationing, the right to refuse medical care for religious and cultural reasons-are raising moral and legal questions about their need and application in medicine and treatments as well as the societal impact that it would have on the future generations. Ethics and law are inter-wreathed and have continued to change throughout history, but the focus remains on fair, balanced and moral thinking across all cultural and religious backgrounds around the world. As the two are inter-junctional one might sometimes have to place more emphasis on family values and downplay the importance of autonomy. And this leads to an increasing need for culturally sensitive physicians and legal and ethical committees in hospitals and health care settings.

The difference between legal and ethical goes back to the difference between “is” and “ought”. Moral rights describe what ought to be, whereas legal rights are the rights that are in the books.

Moral rights represent the natural law v/s legal rights represent the current position of the law. Law and ethics have a “we think therefore we are” relationship. While laws carry with themselves a punishment for violation, ethics does not. In ethics everything depends on the persons conscience and self worth. Ethics come from within a persons moral sense and desire to preserve his self respect. It is not as strict as the laws. Laws are codifications of certain ethical values meant to help regulate society and punishments for breaking them. Certain things are legal but might be considered unacceptable by certain groups of folks. And they might consider something to be right but it might not necessarily be legal. While it may not be an illegal activity, it is considered wrong and we look up to the law to make sure that it doesn't allow it, to maintain decorum and uniformity in the society. In other instances, what might have been an acceptable thing to do since a long time might be made illegal in a effort to change cultural practices that disadvantage or endanger certain groups. There is no compulsion in cultural practices and norms and the law should keep changing to give its people the space to grow and evolve and to stay relevant to the current times and situations. A key issue to consider in relation to the ethics and the law is whether the law is adequate as a guide for our personal and professional lives.

Thus and so, ethics and law are tightly intertwined, they are intersectional and are therefore necessary to provide guidance and stability to people and society as a whole. And let's not forget the oath that we took before donning our white coats and picking our stethoscopes and wrapping them around our necks with pride and the sense of responsibility to save lives and to do more good than harm.

"I swear by Apollo physician, by Asclepius, by Hygieia, by Panacea, and by all the gods and goddess, making them my witness that I will carry out my duty, according to the best of my abilities and judgement, this oath and this indenture. I will use treatment to help the sick according to the best of my ability and judgement, but never with a view to injure or cause wrong doing"



Dissecting Genes

by Shaiyya Srivastava (Lady Hardinge Medical College, New Delhi)

“The power to control our species’ genetic future is awesome and terrifying. Deciding how to handle it may be the biggest challenge we have ever faced.”

— Jennifer A. Doudna, *A Crack in Creation: Gene Editing and the Unthinkable Power to Control Evolution*.

Genomic innovation is not a dream far from realization. With the advent of gene editing techniques such as CRISPR-Cas9, the scientific world has progressed to an ‘era of genetic modifications’.

Carefully performed and documented experiments in controlled laboratory environments have shown the vast potential this technology has in terms of curing life threatening conditions and yet it has received considerable backlash from bioethicists on a global scale, but why?

Human genetic manipulation has always been viewed by the scientific committee as well as the general public with some trepidation because of the ethical debate associated with it. The widely denounced Nazi eugenics, a condemned misuse of natural selection with disastrous and horrifying results, is one such example and the tidal wave of eugenics has been passed on to us through the generations. CRISPR-Cas9 appears to be an attractive option to explore and dissect the human database of genes, opening the door to a wide arena of possibilities.

From a futuristic point of view- it seems like a breakthrough. Erasing the 'faults' in our genes by simple nicking and introducing correct or even 'superior' sequences to create a species far better equipped to handle any health crisis, naturally leading to increased productivity with the help of a modern and affordable technique doesn't sound like a bad idea. In fact, when it is framed that way, any visible opposition strikes to us as a roadblock on a logical path to a better and powerful world.

However as we dig deeper we find that this promising technology that we hope to use someday in order to construct a flawless race, comes with its own set of flaws. The technique consists of using an RNA guide molecule to bind to complementary DNA sequences, which simultaneously recruits the endonuclease Cas9 to introduce double-stranded breaks in the target DNA.

The resulting double-stranded break is then repaired, allowing modification or removal of specific DNA bases [1]. One major concern is the potential off-target effects in areas of the genome that are sensitive to double-stranded breaks [2].

This gene editing is heritable and the dearth of research puts a huge question mark on the risk-benefit ratio associated with it. It can potentially make changes that can fundamentally alter future generations without their consent. Will this enhancement be ethically correct when it doesn't take into account the dignity of our future generations? Where does this dignity begin and how do we set about regulating this technology?

“

This technology can transform society in terms of societal values, its economy status, individuality, injustices, and accessibility.

How extensive and comprehensive are the implications of the proposed scientific interventions through CRISPR? As we strive to answer these questions, holding innumerable debates on international platforms and exploring multiple research options- more questions spring up. This technology can transform society in terms of societal values, its economy status, individuality, injustices, and accessibility [3]. The humongous prospective to transform the pillars of the society as we know it today, crossing moral borders, doesn't sit well with those advocating for ethics and understandably so- it is a risky path to tread on with blurred lines and probable unhealthy consequences.

The field of bioethics is the one with varied opinions, none completely right or completely wrong. Though the international community has widely different perspectives on gene editing for clinical purposes especially germ line editing, the basic principles of bioethics remain the same- Autonomy, non-maleficence, beneficence and justice and based on these very principles we need a call for action.

In conclusion, despite the promising advancements that CRISPR-Cas9 offers, there is a felt need for intensified research on the scientific, medical and ethical aspect of it. Human genome is dynamic, analogous to the dilemma corresponding to it. Bioethics is not a hindrance to progress and improvement but rather a sound and safe way to achieve it. Any technology that employs the use of 'genetics' for any purpose, therapeutic or otherwise, requires properly framed guidelines based on well researched results for its operation in a clinically effective and ethical manner. Maybe we'll cure the deadly diseases we intend to, maybe this is our breakthrough but before that- it needs to be studied well and regulated enough to ensure that our future generations don't pay a prize for our experiments.

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VACCINE HESITANCY- A UNIQUE BIOETHICAL CONONDRUM

-Dr Anirban Dutta, Dr Sonali Sachdeva

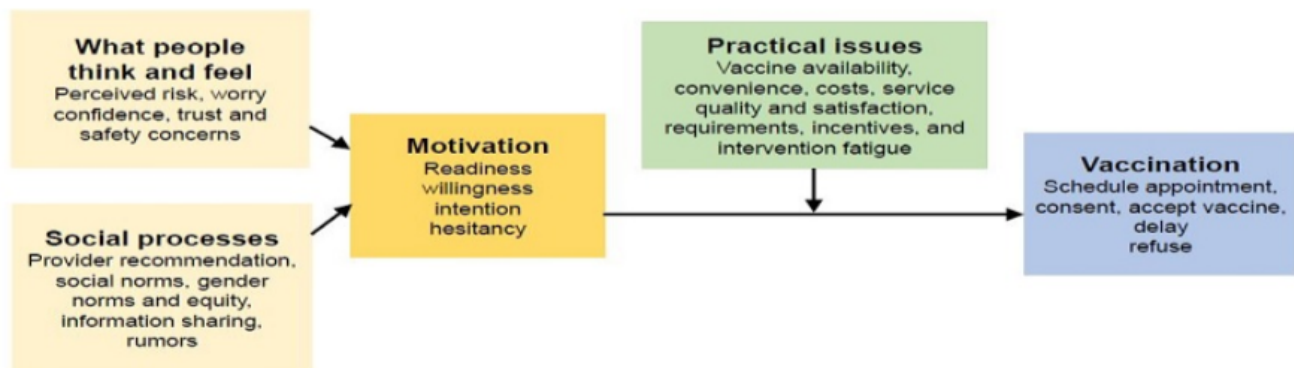
People who refuse to vaccinate their kids have been ridiculed on the internet for the past many years. While anti vaccination sentiments have persisted for as long as vaccines have, these scattered voices of distrust have slowly organized themselves into a serious menace. The World Health Organization has identified Vaccine hesitancy (defined as: the reluctance or refusal to vaccinate despite the availability of vaccines 1) as one of the 'Ten threats to global health in 2019.' (1)

Diseases that were nearly eliminated have started making a comeback around the world. Anti- vaccine rallies and online campaigns have caught strength despite being condemned by a large majority of people. A developing tactic in such campaigns is the "promotion of irrelevant research [as] an active aggregation of several questionable or peripherally related research studies in an attempt to justify the science underlying a questionable claim." (2) The most notorious of these claims is the link of vaccination with autism. This persisting hoax is a result of a fraudulent 1997 article by Andrew Wakefield and his 11 coauthors in The Lancet that claimed to link the MMR (Measles, Mumps and Rubella) vaccine to colitis and autism spectrum disorders. (3) Despite being refuted by more credible studies (4-6), this piece of misinformation continues to be integral in the anti-vaccination propaganda.

Vaccine hesitancy lies within a spectrum ranging from outright rejection of any form of vaccination to acceptance without reservation or hesitancy. Vaccine hesitant individuals are a heterogeneous group of people who may accept certain vaccines and reject others, skip certain vaccines or may not get them in the designated time period. Vaccine safety concern is only one aspect of vaccine hesitancy and the two must not be equated. Most of the issues underlying vaccine hesitancy are complex. Past experiences with vaccination (positive or negative) influence willingness for future immunizations. Adverse events following immunization (AEFI) bear importance in such context. Risk of adverse events leading to hesitancy occurred particularly in the context of mass campaigns, and was more likely with newly-introduced than established, more familiar vaccines. (7)

Lack of confidence in vaccines is a serious problem that has stemmed out of misinformation about vaccines. A WHO/UNICEF Joint Reporting Form (JRF) analysis in 2012 revealed that lack of confidence in vaccines was a significant problem, even in low-income settings. In Uganda, where lack of access was viewed as the main problem in vaccine outreach, as high as 19% of the population lacked confidence on effectiveness of vaccines. (7)

Increasing Vaccination Model



Source: The BeSD expert working group. Based on: Brewer NT, Chapman GB, Rothman AJ, Leask J, and Kempe A (2017). Increasing vaccination: Putting psychological science into action. *Psychological Science for the Public Interest*. 18(3): 149-207

Fig 1- Increasing Vaccination Model (Courtesy: World Health Organization)

In an era of man-made disasters borne out of greed, vaccine hesitancy poses a challenge different from the rest. At the heart of this menace is an idea that is a very humane-“Every parent wants to do the best for their children.” This idea is why strategies based on reason may not elicit quick change in people with vaccine hesitancy. For example, during the pH1N1 influenza pandemic, many pregnant women hesitated to obtain pandemic influenza vaccination despite the recommendation by their health care provider and their country’s immunization program leaders. Even improved access to receive vaccine did not reliably overcome this. (7)

Another concern is the barrier posed by religion. Numerous studies have shown that religion influences decisions on vaccination (8-10), and religious objection is more often that not an excuse used by parents as to avoid the vaccination of their children. (11) There is merit in the question of validity of parental autonomy in a situation where their decision is factually baseless and potentially detrimental to health of the children and the community. (12)

The ethical considerations in such situations cannot be limited to those impacting individuals; it is necessary to consider the policy in a public health ethics context. 13

Strategies that incorporate multiple approaches and those strategies that are dialogue based tend to perform better. (14) Pre-natal visits provide a great opportunity to address concerns of parents regarding vaccination. Counselling them and facilitating parents to educational resources for further understanding of vaccination is a simple method that can be adapted by all clinicians. Addressing public health issues without affecting the anecdotal judgments—benignly intended, but lacking scientific substantiation should not be allowed to override common sense, reasoned consideration, and rational public health policy. (16)

It found that the introduction of education initiatives, particularly those that embed new knowledge into a more tangible process (e.g., hospital procedures, individual action plans), were more successful at increasing knowledge and awareness and changing attitudes. (14) Interventions like improving convenience and access to vaccination; mandating vaccinations or imposing sanctions for non-vaccination; employing reminder and follow-up; and engaging religious or other influential leaders to promote vaccination in the community proved effective in encouraging a more positive outcome. (14)

But making vaccination mandatory has faced opposition in the past. The California Senate Bill 277 mandated vaccination of children prior to admission in any elementary or secondary school, daycare facility, nursery school or development facility. 15 This bill faced stiff and sometimes foul resistance by a small but vocal group of people. The chief issue in such a scenario is the resistance to forced vaccination.

Research in the issue of vaccine hesitancy is new and with time, strategies that work best locally will be more intelligible. Present findings tell that although a variety of strategies can be applied to tackle vaccine hesitancy, success of the individual strategies vary widely among the target populations.

The society benefits from universal vaccination in more way than one. Unlike other medicines, vaccines are beneficial to the individual and the community at the same time. 'Herd Immunity' is a concept fundamental to success of vaccination campaigns. Outbreaks of highly contagious diseases like Measles may be attributed to local decline in Herd Immunity. The outbreak of Measles in California, USA (2014-15) is a recent example of the same. 12 Another example of the impact of vaccines- it is estimated that universal coverage of the pneumococcal conjugate vaccine could potentially avert 11 million days of antibiotic use per year in children, equivalent to a 47% reduction in the amount of antibiotics used to treat *S. pneumoniae*. (Review on Antimicrobial Resistance, 2016). In our post-antibiotic era, these numbers plead for action.

The problem has not gone unnoticed, however. WHO's Increasing Vaccination Model (Fig-1) is a succinct illustration of the process of utilization of vaccines in the society.

A WHO SAGE working group study on strategies for addressing vaccine hesitancy focused on interventions that were successful in improving vaccine uptake and shaping a positive outlook towards vaccination.

Vaccine hesitancy is not likely to make it to the news unless another disease outbreak attributable to vaccine hesitancy is noticed. Hence, it is imperative for the medical community to look into this matter with utmost seriousness and identify and devise strategies that cull this dilemma with an approach to understand the lacunae in knowledge or attitude of the recipients.

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Anti-Vaccinators and Ethics

Shlok Jain, Sumandeep Vidyapeeth

The invention of the vaccine is unarguably one of the greatest medical achievements in the past century. Since the invention of vaccinations, the wide use of immunizations has drastically lowered the incidence of, and in some cases, completely eradicated infectious diseases that once took the lives of millions.

Vaccinations not only provide a direct benefit to the person immunized, but also protect the community at large. When almost all members of a particular population are immunized, infectious diseases cannot take root. So, when a healthy child or adult refuses vaccinations, it puts others at risk and makes it more difficult to fully eradicate the disease. How should doctors respond to their patients' refusals of vaccines? Should we have laws that penalize those who refuse vaccinations? This is the main ethical dilemma we face with regard to vaccinations.

Vaccines work by stimulating a person's immune system to produce antibodies that fight a specific antigen, thus enabling the patient to build immunity to the disease without actually being infected. The stimulation works by "tricking" the immune system into thinking it has been infected by injection of a dead virus, or a weakened version of the virus also known as an "attenuated virus." Those who are vaccinated will not become ill, even if they are exposed to the disease years later.

To provide the best protection from infectious diseases, most members of a community must be vaccinated. "Herd immunity" is the special term for when enough members of a community are vaccinated to protect even those who are not vaccinated, e.g. new-borns and the immune-compromised. The idea is that enough people will be vaccinated, so the infectious virus will have nowhere to incubate.

In recent years, the debate between the anti-vaccine establishment, often called "antivaxxers" and those who are pro-vaccine has come to a head. Both sides use emotionally charged language to convince others to join their side. In this module, we lay out competing concerns in an emotionally neutral context that encourages more productive public discussion and deliberation.

Vaccines and the Link to Autism; Where it all started :-In 1998, The Lancet, a British medical journal, published a study by Dr. Andrew Wakefield that suggested that autism in children was caused by the combined vaccine for measles, mumps and rubella – MMR for short. In 2010, The Lancet retracted the study following a review of Dr. Wakefield's scientific methods and financial conflicts. Various studies failed to reproduce Dr. Wakefield's finding. A 1999 study of 498 children published in The Lancet did not support a causal association between MMR and autism.

A 2002 study of 535,544 children vaccinated in Finland showed no association between MMR vaccination and encephalitis, aseptic meningitis or autism. Another 2002 study, which looked at 537,303 children born in Denmark, provided “strong evidence against the hypothesis that MMR vaccination causes autism,” the authors wrote.

Despite these and other challenges to the study, Dr. Wakefield’s research had a strong effect on many parents. Vaccination rates in the U.K. plummeted after the publication of that paper, and the study helped launch an anti-vaccine movement in the U.S..

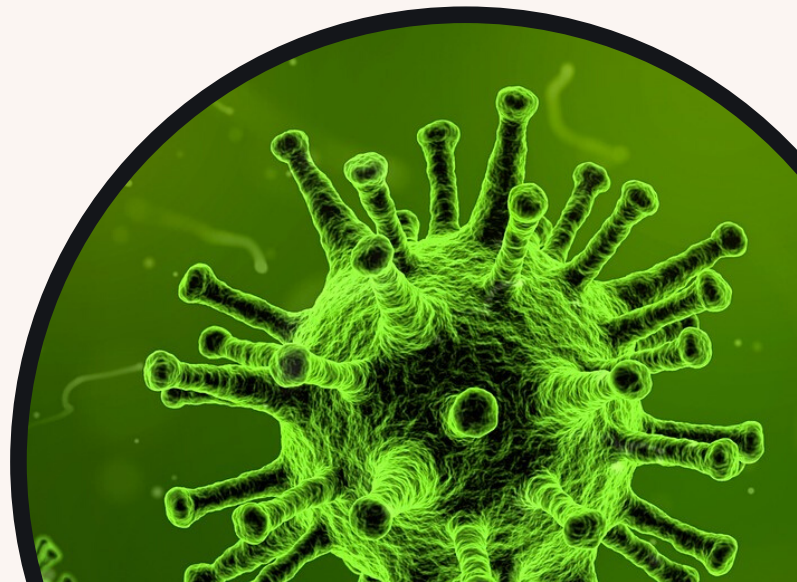
THE MODERN PHILOSOPHICAL DEBATE

Autonomy & Liberty

We are free to live our lives as we see fit. Parental autonomy refers to parents’ capacity to raise their child in a way that they see fit. Parents are free to decide to raise their child in accordance with a particular religious lifestyle, or in accordance with other lifestyle choices (such as veganism). However, a child cannot be subjected by a parent to a poor education, to communicable disease, to ill health, or to death. Child protective services steps in when a parent abuses a child, neglects to take care of them, or makes decisions that adversely affect the health of a child such as not treating a painful or curable illness. The decision to withhold medical care can amount to parental abuse or neglect even if the parent’s reason is religious in nature. Refusing vaccinations, however, does not directly harm the individual child and therefore does not constitute as child neglect or abuse in the typical sense.

Promoting Public Health Utilitarianism:

Utilitarianism is based on the ideology that actions are right to the extent that they produce the best consequences for the greatest number of people. Public health interventions, such as mandatory vaccination campaigns, are often justified by utilitarianism, specifically rule utilitarianism. Public health policies and interventions are justified on the basis that it produces the best results for society at large, providing the greatest benefit to the greatest number of people. Public health decisions made on the basis of overall statistics and demographic trends are ultimately better for each one of us, even if particular interventions may not directly benefit some of us. Mandatory vaccination policies are by and large better than their absence for everyone. Vaccines have drastically reduced the morbidity and mortality of infectious diseases.



Measles Outbreak in Disneyland:

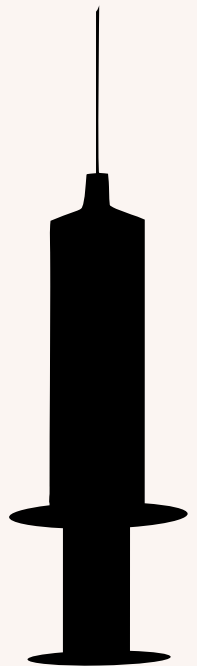
The majority of measles cases diagnosed in 2015 have been tied to the outbreak in Disneyland, California. What began in December as a single case led to at least 117 people contracting measles across the United States. The United States had more cases of measles in the first month of 2015 than the number that is typically diagnosed in a full year, according to the New York Times

Conclusion:

These outbreaks not only put a strain on national healthcare systems but also cause fatal casualties. Therefore, it is of the utmost importance that all stakeholders in the medical world - physicians, researchers, educators, and governments - unite to curb the influence of the anti-vaccination movement targeting parents. To combat the anti-vaccination movement, there must be a strong emphasis on helping parents develop trust in health professionals and relevant authorities, educating them on the facts and figures, debunking the myths peddled by the anti-vaccination movements, and even introducing legislation that promotes vaccination, if not mandating it.

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Ethics in Family Planning

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In this day and age of advancement in all science-based fields, medical science has improved by leaps and bounds. There has been a drastic increase in the life expectancy due to increased availability of modern medicines and life-saving measures.

Vaccinations have reduced the chance of contracting dangerous diseases and some such as smallpox, which had claimed the lives of millions, have been eradicated as well while others such as polio are on the verge of eradication. Due to this, the date rate has gone down tremendously over the years.

As is to be expected, this has a major effect on population dynamics and a large increase in world population. With the world population having reached 7.7 billion in April 2019, we are soon approaching the mammoth figure of 8 billion.



Only 100 years more to reach
7 billion

To put this into perspective, it took over 2,00,000 years of human history for the world population to reach 1 billion, and only 100 years more to reach 7 billion. Those figures themselves are the first hint of a massive imbalance.

As we've all learnt through the ages, human beings make use of or rather exploit natural resources for their personal benefit. The convenience that this produces, however, comes at the cost of the environment. Industrialization has resulted in farmlands and forest lands being converted into factories and human wastelands. Needless to say, methods of population control being implemented, so as to reduce strain on the environment is the need of the hour. Family Planning is one of the easiest methods for doing so.

This is where the ethical dilemma arises. Starting a family is a very emotionally charged and private decision taken by a married couple. As such, attempts to intrude on this big moment of a couple's life begs for the question to be asked, is it ethical to force a couple to restrict the number of children or the size of the family they may want?

Government policies such as the two-child policy adopted by China are definitely beneficial for the earth, but what about the individual lives of the couple unit? Isn't it essentially governmental intrusion into a very personal and private decision of their lives? Think of the public outrage that would take place if it were to be found that the government was recording our private calls or messages. It is indirectly a form of subjugation of the will of the people for the greater good. So what do we choose, greater good or personal will?

There is never an easy answer to questions like these. The only solution in sight is finding a middle ground. Instead of enforcing restrictions on the number of children, emphasis must be given to educating the people about the benefits of a small family unit and the perks that come with it, such as greater financial freedom, ability to provide a better education, individualized attention to each child.

Gladly, this has been in effect in our country for a while and the results are starting to show. Slogans such as "Hum do, humaare do" as well as involvement of popular celebrities in the campaigns have led to reduction in average family sizes in the country.

The message is not just restricted to urban areas, rural areas too have been showing a good response. For the country that has the second-largest population in the world and is soon poised to become the first, this is definitely a welcome change.

As we always say, change begins at home. Empowerment of women and their increased role in the family unit has definitely contributed to this positive effect.

The overall effect of this change on natural resources and the planet cannot be predicted. But we, as human beings and citizens of the earth, first and foremost can definitely do our level best to fight for the planet we call home. The way to do so is to control this "population explosion". If family planning helps us achieve that, why not?

The will to do so, however, must arise from a deep-seated love for the environment and a need to protect it for our kids, our future generations. As the famous scientist Carl Sagan once said,

"Look at that dot. That's here. That's home. That's us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives. The aggregate of our joy and suffering, thousands of confident religions, ideologies, and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king and peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every superstar, every supreme leader, every saint and sinner in the history of our species lived there-on a mote of dust suspended in a sunbeam."

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