

PREVENTION AND DETECTION OF CORONA VIRUS WITH VACCINE AND BIOCHIP IMPLANTS: AN ETHICAL EVALUATION

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Abstract

COVID-19 is a serious threat to the life of the human beings. The virus spread through respiratory droplets, aerosols, and contact with a biotic surface. Companies and institutes are therefore involved in developing effective methods for the quick detection and prevention of SARS-CoV-2. In order to prevent Covid-19, there are different types of vaccines that are developed by international institutes. Production, price, distribution and equal accessibility are the different ethical issues related to vaccine. Apart from the detection of Covid 19 by various testing methods, multi-national companies developed a biochip to identify COVID-19 in the general population before its symptoms begin by analysing the body temperature variations and antibody status. Biochips can make thousands of biological responses in a few seconds. The question of safety or risk factors, misuse of the collected data by a totalitarian government, common good, informed consent, breach of privacy and autonomy, issues related to social justice, directly and indirectly affecting the developing world are impending ethical questions that need to be answered. Though it has many positive aspects, research should respect human dignity, autonomy

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and the common good. If biochips implantations do not have an ethical approach based on just laws, faith and virtues, manipulations will continue, and the consequence would be a specially designed group in the society, steered by the whims and fancies of the authority which also affect directly and indirectly the growth of the developing worlds.

Keywords: Autonomy; Biochip; Common Good; Do-not-harm; Human Dignity; Micro Fluidic Chip; Pandemic for Profit; RFID Chip; Social Justice

Introduction

The Corona virus and COVID-19 pandemic is the defining global health crisis of our time and the most significant challenge we have faced since World War II. However, the pandemic is much more than a health crisis, and it is also an unprecedented socio-economic crisis having the potential to create devastating social, economic and political effects that will leave deep and longstanding scars. It is reported that the virus can spread through respiratory droplets, aerosols, and contact with the biotic surface. Similarly, the virus may also be circulated by the faecal route. It is also observed that asymptomatic infections and transmissions have occurred.¹ This unexpected context has directed worldwide attention. There is an urgent need in the prevention and detection to develop sensitive, accurate, rapid and low-cost diagnostic tools for this disease. A plethora of companies and institutes are therefore interested in developing effective methods for the rapid detection of SARS-CoV-2 ribonucleic acid (RNA), antibodies, antigens, and the virus.² As a result, international biotechnological institutes made different types of vaccines for the prevention of Covid-19. The ethical issues of vaccine include distribution, equal accessibility and the price. Moreover scientists in the bio-sensing research community and in the biosensor industry are trying to develop an accurate COVID-19 detection system which will tremendously benefit in managing the current COVID-19 pandemic.³ Eventually, the US Department of Defence (DARPA), the Bill and Melinda Gates Foundation in contract with Silicon Valley Company developed (It was in conceptual level and now being under final process of its invention) a biochip (RFID epidermal sensor including hydro gel membranes) to detect COVID-

¹C. Feiyun & Z. Susan, "Diagnostic Methods and Potential Portable Biosensors for Corona Virus Disease 2019," *Biosensors and Bioelectronics* 165 (2020) 112-349.

²For a detailed study on these methods see Ji Tianxing, L. Zhenwei, W. Guo-Qiang, et al., "Detection of COVID-19: A Review of the Current Literature and Future Perspectives," *Biosensors and Bioelectronics* 166 (2020) 112-455.

³For a detailed study on biosensors see Feiyun & Susan, "Diagnostic Methods and Potential Portable Biosensors," 112-349.

19 in the general population before its symptoms begin by analysing the body temperature variations and antibody status.⁴ The chip can be painlessly placed under the skin with a single injection. It is claimed as an easy method to control and prevent Corona virus in the general population. There are myriad of ethical issues and questions raised on this proposed implantation in human beings. The question of safety or risk factors, misuse of the collected data by a totalitarian government, common good, informed consent, breach of privacy and autonomy, and issues related to social justice are impending questions that need to be answered. This paper is divided into two parts. The first part describes an overview of vaccine and related ethical issues, and the second part analyses biochip and ethical problems related to biochip implants in human beings.

1. Vaccine and Related Ethical Issues

The morality of vaccination depicts not only the responsibility to protect one's own health, but also to safe guard the life of others. Production, fair and equitable distribution, safe and effective, vaccine to the poorest and most vulnerable people, price are the main ethical problems related to vaccine. Albright the different ethical approaches regarding the use of vaccine, due to the limited space we concentrate only on the Catholic perspective.

The Catholic Church documents discuss the general criteria about the use of vaccine.⁵ It categorically argues that it is immoral to use stem cells taken from aborted fetuses in medical research.⁶ Church states that there exists a distinct grade of moral responsibility in case of producers of vaccine to recipients. It also explains that even though the vaccine is derived from stem cells, it is morally allowed to take vaccination when there is no substitution and there is a grave threat to health.⁷ This points out that public health must not be threatened.⁸

⁴<https://www.uidevices.com/covid/> (accessed September 25, 2020)

⁵Cf. The Pontifical Academy for Life, Moral reflections on vaccines prepared from cells derived from aborted human fetuses, 5 June 2005; Congregation for the Doctrine of Faith, *Dignitas Personae*, September 8, 2008; The Pontifical Academy for Life, Note on Italian Vaccine issue, July 31, 2017; Congregation of the Doctrine of Faith, "Note on the Morality of Using Some Anti-Covid-19 Vaccines," 21 December 2020.

⁶Michael J. O'Loughlin, "U.S. bishops' Internal Memo: Catholics can Take Covid-19 Vaccines," *America: The Jesuit Review*: <https://www.americamagazine.org/politics-society/2020/11/23/misinformation-us-bishops-catholics-covid-vaccine-abortion> (accessed April 19, 2021).

⁷O'Loughlin, "U.S. bishops' Internal Memo..."

⁸O'Loughlin, "U.S. bishops' Internal Memo..."

More clearly *Dignitas Personae* explains that (35) the use of 'biological material' of illicit origin would be ethically permissible provided there is a clear separation between those who, on the one hand, produce, freeze and cause the death of embryos and, on the other, the researchers involved in scientific experimentation. The criterion of independence is not sufficient to avoid a contradiction in the attitude of the person who says that he does not approve of the injustice perpetrated by others, but at the same time accepts for his own work the "biological material" which the others have obtained by means of that injustice. When the illicit action is endorsed by the laws which regulate healthcare and scientific research, it is necessary to distance oneself from the evil aspects of that system in order not to give the impression of a certain toleration or tacit acceptance of actions which are gravely unjust.

It is noticed that within the general moral norm there exist divergent level of responsibility. This means serious threat to the life may be morally proportionate to allow the use of those 'biological material of illicit origin.' For instance, when there is no possibility of vaccines that is not produced from embryonic stem cells, parents may be allowed to use a vaccine of illicit origin in the case of serious danger to the health of their children. Moreover, everyone who uses it has to make disagreement about its production (*Dignitas Personae*, 35). Further, it is argued that "in organizations where cell lines of illicit origin are being utilized, the responsibility of those who make the decision to use them is not the same as that of those who have no voice in such a decision" (*Dignitas Personae*, 35).

Recently the Congregation of the Doctrine of Faith (Note on the morality of using some anti-Covid-19 vaccines) makes clear clarifications about the use and the distribution of the Covid vaccine.

When there is ethically faultless Covid-19 vaccines are not available, e.g. "in countries where vaccines without ethical problems are not made available to physicians and patients, or where their distribution is more difficult due to special storage and transport conditions, or when various types of vaccines are distributed in the same country but health authorities do not allow citizens to choose the vaccine with which to be inoculated," it is morally permissible to accept Covid-19 vaccines that have made biological material of illicit origin (aborted fetuses) (CDF, Note on the morality of using some anti-Covid-19 vaccines, 2).

If we do not take vaccine, SARSCoV-2 virus may spread to everyone (CDF, Note on the morality of using some anti-Covid-19

vaccines, 3). It might be concluded that in this context “all vaccinations recognized as clinically safe and effective can be used in good conscience with the certain knowledge that the use of such vaccines does not constitute formal cooperation with the abortion from which the cells used in production of the vaccines derive.” (CDF, Note on the morality of using some anti-Covid-19 vaccines, 3).

It is also the duty of the developed countries and international organizations to provide ethically acceptable vaccine to the poor countries. The lack of access to vaccine can affect the health and economy of the nations, also it may lead to social poverty (CDF, Note on the morality of using some anti-Covid-19 vaccines, 6).

2. Biochip-A Short Outline

The radio-frequency-identification (RFID) technology has been around for decades. It is a tag, label or card that can exchange data with a reader using radio frequency (RF) signals. It usually has a built-in antenna and an integrated circuit (IC). The antenna can send and receive radio signals, while the IC takes care of modulating and demodulating these signals, as well as the processing and storing data. The RFID chip is very similar to a bar code label as it also typically works with a scanner or reader, although it has a broader scope.⁹ Accordingly, biochip is a “permanent chip made of an advanced material called hydrogel, which irreversibly ties humans to the internet cloud.”¹⁰ The hydrogel chip¹¹ can be injected with a syringe, and it could be injected along with any COVID vaccination.¹² Generally, a hydrogel chip has the size of a grain of rice that has the capability to send “feedback to a database on changes in body chemistry and other biometrics.”¹³

Currently, there are three types of biochips, namely, DNA microarray, protein microarray, and micro fluidic chip. Firstly, a DNA microarray or DNA biochip is “a set of tiny DNA spots fixed to

⁹<https://medicalfuturist.com/rfid-implant-chip/>(accessed September 15, 2020)

¹⁰ <https://steemit.com/covid/@munkle/permanent-injectable-biochip-covid-sensors-near-fda-approval/>(accessed September 25, 2020).

¹¹ Hydrogel-based microfluidic chips are “more biologically relevant than conventional polydimethylsiloxane (PDMS) chips, but the inherent swelling of hydrogels leads to a decrease in mechanical performance and deformation of the as-prepared structure in their manufacture and application processing.” Cf. <https://onlinelibrary.wiley.com/doi/abs/10.1002/smll.201802368>(accessed September 15, 2020).

¹² <https://steemit.com/covid/@munkle/permanent-injectable-biochip-covid-sensors-near-fda-approval/>(accessed September 25, 2020).

¹³ <https://steemit.com/covid/@munkle/permanent-injectable-biochip-covid-sensors-near-fda-approval/>(accessed September 25, 2020).

a strong surface. A researcher utilizes to calculate the expression levels for a large number of genes. Every DNA mark comprises picomoles of particular genes which are termed as probes. These can be a short segment of genetic material under high rigidity situations.”¹⁴ Secondly, a protein microarray or protein chip technique is “used to follow the actions as well as connections of proteins, and to find out their function on a large scale.” The main benefit of protein microarray is that we can chase a large number of proteins in parallel.¹⁵ Thirdly, microfluidic biochips or lab-on-a-chip (Hydrogel) are “a choice to usual biochemical laboratories and are transforming several applications like DNA analysis, molecular biology procedures, proteomics which is known as the study of proteins and diagnostic of diseases (clinical pathology).”¹⁶

2.1. Biochip-Ethical Evaluation

The use of biochips raises myriad of ethical issues which read as follows.

2.1.1. Goals of Health Care

Prevention and detection of Corona virus should not be against the goals of health care. It should help a) to promote health and prevent disease; b) to deepen our understanding of the causes of disease and to develop new forms of treatment; c) to save a life, cure illness or slow the progress of the disease; d) to relieve suffering and disability, and e) to heal all people including the disabled or elderly when they are sick.¹⁷

2.1.2. Personal and Common Good

Biochips have many positive aspects. We can trace a person or animal anywhere in the world by using the biochip. It is helpful to collect, store and update the information on a person. It can be also used as a BP sensor, glucose detector, and oxygen sensor.¹⁸ It is reported that the quality of life can be improved when such methods are employed to collect up-to-date health information from a person. Moreover, the presence of the biochip helps to rescue the sick person,

¹⁴ <https://www.elprocus.com/what-is-a-biochip-and-types-of-biochips/> (accessed September 25, 2020).

¹⁵ <https://www.elprocus.com/what-is-a-biochip-and-types-of-biochips/> (accessed September 25, 2020).

¹⁶ <https://www.elprocus.com/what-is-a-biochip-and-types-of-biochips/> (accessed September 25, 2020).

¹⁷S. Kanniyakonil, *Bioethical Issues: A Catholic Moral Analysis*, Kottayam: OIRSI, 2017.

¹⁸<https://www.elprocus.com/what>.

through faster detection of any virus. Biochips are capable of making thousands of biological responses in a few seconds.¹⁹

The main objective of this implant is to detect the presence of the Corona virus in persons exposed to infection. This will help to avoid quarantine and detect the presence of the virus even before the symptoms are displayed. For instance, the *Industry Magazine* writes:

Why are pandemics so hard to stop? Often it is because the disease moves faster than people can be tested for it. The Defence Department is helping to fund a new study to determine whether an under-the-skin biosensor can help trackers keep up—by detecting flu-like infections even before their symptoms begin to show.²⁰

Moreover, the information collected from the biochip should be used for the good of the individual, community and the common good.²¹ All should have access to biochip information; it should not be restricted to the hands of a few wealthy nations and business houses.

2.1.3. Do not Harm (Non-Malfeasance)

The use of biochip could be in line with the ethical principle do not harm.²² There are several ethical issues related to the use of biochip for covid-19 detection. The fundamental question is about the safety of the technique. There are many health problems related to the use of biochips. For instance, the side effects are not known to the public. It is possible that

there should be a higher standard for safety when technologies are used for enhancement rather than therapy, and this issue needs public debate. Whether the informed consent of recipients should be sufficient reason for permitting implementation is questionable because of the potential societal impact. Other issues, such as the kinds of warranties users should receive, and the liability responsibilities if quality control of hard/soft/firmware is not up to standard, could be addressed by manufacturing regulation.²³

¹⁹<https://www.elprocus.com/what>.

²⁰ <https://steemit.com/covid/@munkle/permanent-injectable-biochip-covid-sensors-near-fda-approval>(accessed September 25, 2020).

²¹K.D. O'Rourke & P. Boyle, *Medical Ethics: Sources of Catholic Teachings* St Louis: The Catholic Health Association of the United States, 1989, 128.

²²T.L. Beauchamp & J.F. Childress, *Principles of Biomedical Ethics*, New York: Oxford University, 2001, 117; Congregation for the Doctrine of the Faith, *Samaritanus Bonus: On the Care of Persons in the Critical and Terminal Phases of Life*, Rome, 2020, part 1, 2.

²³Cf. <https://www.bu.edu/wcp/Papers/Bioe/BioeMcGe.htm> (accessed September 26, 2020).

Furthermore, it is possible that even governments can misuse this technology to monitor the people of their choice and decide their destiny. They can trace their movements and intrude into our privacy even without our knowledge. The government can collect any information on an individual and manipulate the same for their interests. The most important ethical issue is that it cannot be removed once injected. Further, one cannot opt-out, once a government has legally implemented this.²⁴In short, this technology has its own merits and demerits.

2.1.4. Autonomy and Informed Consent

The most troubling issue in biochip is of privacy, autonomy, and informed consent;²⁵ it can be inserted into the human without his consent or intervention.²⁶ Thus, the privacy of the individual is at risk. It can restrict individual liberty and self-respect. Biochip may even control the behaviour of a person to a certain extend.

The principle of autonomy requires that the patient has genuine consent in deciding whether to insert a chip or not.²⁷ The general principle is that medical research cannot be carried out without the consent of the person, particularly concerning the implantation of biochip.²⁸ A free, informed consent, especially when explicitly given, is undoubtedly the best way to express our social solidarity.²⁹ The voluntary consent of the person is essential even for a Covid test. If the patient's decisions are not autonomous or self-determined, this can lead to treating a person without sufficient respect.³⁰ An individual is not obliged to use biochips, even in a situation of grave emergency. Additionally, individuals must not be forced to implant biochips even in a justified emergency.³¹

²⁴<https://www.elprocus.com/what-is-a-biochip-and-types-of-biochips/> (accessed September 26, 2020).

²⁵Beauchamp & Childress, *Principles of Biomedical Ethics*, 63.

²⁶<https://www.elprocus.com>, 20.

²⁷A.S. Daar & et al., "Living-Donor Renal Transplantation: Evidence-Based Justification for an Ethical Option," *Transplant Proceedings* 22 (1990) 101.

²⁸J. Montgomery, *Health Care Law*, New York: Oxford University Press, 1997, 424.

²⁹C. Byk, "Living Organ Donation: European Perspective," in D.P.T. Price & H. Akveld, ed., *Living Organ Donation in Nineties: European Medico-Legal Perspectives*, Leicester: Eurotold Project, 1995, 58.

³⁰D. Lamb, "Ethical Aspects of Different Types of Living Organ Donation," in Price & Akveld, ed., *Living Organ Donation in the Nineties: European Medico-Legal Perspectives*, 48-49.

³¹H.L. Schreiber, "Legal Implications of the Principle *Primum Nihil Nocere* as it Applies to Live Donors," in W. Land & J.B. Dossetor, ed., *Organ Replacement Therapy: Ethics, Justice and Commerce*, Berlin, Heidelberg: Springer-Verlag, 1991, 15.

2.1.5. Issues of Justice

One can define justice as “fair, equitable, and appropriate treatment in light of what is due or owed to persons.”³² There are many injustices concerning the use of biochips.

Projects of the multi-national companies: It is alleged that “the Corona virus pandemic is a cover for a plan to implant tractable microchips an idea promoted by the Microsoft under their so-called commitment of extending technologies to all.”³³ According to the head of the Russian Communist party, “so-called ‘globalists’ supported a covert mass chip implantation which they may in time resort to, under the pretext of mandatory vaccination against Corona virus.”³⁴ Roger Stone, a former adviser to Donald Trump, elucidates that “Bill Gates and others were using the virus for “micro chipping people so we can tell ‘whether you’ve been tested.”³⁵ In an interview, Mr Gates asserts that “eventually ‘we will have some digital certificates’ which would be used to show who had recovered, been tested and ultimately who received a vaccine. He made no mention of microchips.³⁶

Pandemic for profit: Stefano Montanari, an Italian researcher, argues that “the epidemic ‘will continue to be totally made-up’ until there is a vaccine that “will bring money and corruption into the already full pockets of some.”³⁷ He substantiates that

this is a sensational hoax, but a very successful one. There is no evidence whatsoever to support his theory that the pandemic is a hoax. Indeed, whichever pharmaceutical company develops a vaccine could potentially profit from the success, but the idea that this potential profit would be a motive to invent a pandemic is far-fetched.³⁸

The ultimate plan of certain international companies is to control food, health and security so that they get millions of turnover from these projects.

Misuse of the Technology: The totalitarian governments can misuse the technology for their benefit. They will be like watchdogs, whose responsibility is to make sure that people do not act illegally or irresponsibly against their will. It is noticed that someone’s mood,

³²Beauchamp & Childress, *Principles of Biomedical Ethics*, 226.

³³ <https://www.covid19facts.ca/en/fact-checked/is-bill-gates-using-microchip-implants-to-fight-the-coronavirus> (accessed September 27, 2020).

³⁴<https://www.bbc.com/news/52847648> (accessed September 26, 2020).

³⁵<https://www.bbc.com/news/52847648>

³⁶<https://www.bbc.com/news/52847648>

³⁷<https://www.bbc.com/news/52847648>

³⁸<https://www.bbc.com/news/52847648>

activity, heart rate, respiratory rate, body temperature, and sexual activity can be read with advanced biosensors and artificial intelligence.³⁹

Reward and Punishments: It is also observed that biochip can control the life of the people. Dr Carrie Madej, a medical doctor, foresees

a dark future in which the masses of people around the world are controlled by a horrific system of government-run artificial intelligence which delivers rewards and punishments through the permanent implants. Nanotechnology even makes it possible, to inject into people an artificial intelligence-activated “kill switch,” such as particles containing cyanide.⁴⁰

2.1.6. Threat to the Growth of the Developing Worlds

Biochips implantation can directly and indirectly affect the growth of the developing worlds. The developing countries are forced to buy the vaccine and the biochips. The price of the biochips is fixed by the multinational companies. The poor people could not afford the cost of the biochips. Once the chips are inserted in poor people, quality of the life of the people is controlled by the multinational companies. Subsequently even those companies can control the reproductive system, and can also regulate the growth of the population rate in developing world. Depopulation is the hidden agenda of these companies.

2.1.7. Human Dignity and Moral Norms

Basing on human dignity and moral norms, Pope John Paul II argues that “all scientific and technical progress whatever must therefore keep the greatest respect for moral values, which constitute a safeguard of the dignity of the human person.”⁴¹ Pope Pius XII asserts, “among the methods contrary to morality, there must be included racism... and eugenic sterilization.”⁴² Implantation of biochip must respect the fundamental dignity of the human being. The fundamental attitudes that inspire the interventions should not flow from a racist and materialist mentality aimed at human well-being that is, in reality, reductionist. The dignity of a human

³⁹ <https://steemit.com/covid/@munkle/permanent-injectable-biochip-covid-sensors-near-fda-approval> (accessed September 28, 2020).

⁴⁰ <https://steemit.com/covid/@munkle/permanent-injectable-biochip-covid-sensors-near-fda-approval>

⁴¹John Paul II, “The Ethics of Genetic Manipulation,” in K.D. O’Rourke & P. Boyle, *Medical Ethics: Sources of Catholic Teachings*, 131.

⁴²O’Rourke, & Boyle, *Medical Ethics: Sources of Catholic Teachings*, 129.

transcends his/her biological condition.⁴³ Besides, research in biochips does not jeopardize the personality and the identity of the person.

Conclusion

In this paper, we have discussed the scientific development and ethical issues related to vaccine and biochip. Dignity, solidarity, common good and fair distribution are the norms that to be followed with regard to the moral decision connected to vaccine.

Biochips may help control coved pandemic, helping to detect patients who have Corona virus. However, there are many ethical issues behind it. If a government crafts a policy for the implantation of biochip and forces it on its people, privacy and individual freedom may be jeopardized. The fundamental ethical question is, whether it is for the well-being of humanity or profit-making of businesses. Finally, if biochips implantations do not have an ethical approach based on fair laws, faith and virtues, manipulations will continue, and the consequence would be a specially designed group in the society, steered by the whims and fancies of the authority. Consequently, biochips become a curse for human being. Taking everything into account, it seems reasonable to assume that vaccine and biochips, should treat a human being as a person from the moment of conception to natural death so that advances in medical research and technology uphold the dignity of the human being.

⁴³John Paul II, "Dangers of Genetic Manipulation," Address to Members of the World Medical Association, Rome, 1983, 131.