Ethically compromised vaccines and Catholic teaching

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Ethically compromised vaccines are vaccines where the virus used in the manufacture of the vaccine has been cultured in a cell line developed from tissue grown from an aborted foetus. Vaccines are ethically compromised by this connection to abortion. Within the Catholic Church, the Pontifical Academy for Life has called for research and development of alternative vaccines which are ethically acceptable. Until alternative vaccines are developed, it has also accepted the use even of these ethically compromised vaccines in order to protect children, pregnant women and the population as a whole from the risk of contracting serious disease.

Vaccination and the Catholic Church

It has been alleged that Pope Leo XII (1823-29), stated, "Whoever allows himself to be vaccinated ceases to be a child of God. Smallpox is a judgement of God, the vaccination is a challenge toward heaven."[1] While this text is often attributed to Leo XII, there is no official record of the comment. An article by Keefe attempts to track the origin of the statement. It concludes that Pope Leo XII did not say this, but that it could at the most represent his views when he was a cardinal.[2]

Since this time there have been many affirmations from the Vatican supporting vaccination and the development of new vaccines to combat the consequences suffered from many infectious diseases.

Vaccines

Vaccines are produced from either a weakened or killed form of the infectious agent. When a person is vaccinated, an immune response occurs, similar to that which arises with natural infection. Thus, immunity to a disease is acquired without experiencing the disease. Viruses for viral vaccines can be grown in a selection of cell lines. These can be Vero cells (derived from adult African green monkeys), or MRC5 and WI-38 cells (human diploid cell lines). The yolk sac or the allantoic cavity of chicken eggs can also be utilised for viral growth for vaccine production.[3]

Vaccines available in New Zealand

Medsafe (New Zealand Medicines and Medical Devices Safety Authority) is responsible for the regulation of vaccines (and other medical needs). Through the examination of the globally available data they ensure that approved vaccines are safe for use by the New Zealand population. Vaccines are assessed in view of a risk-benefit balance to the population.[4]

In 2011, the New Zealand government provided funding for eleven different childhood vaccines. Additionally, the influenza vaccine is provided to those aged sixty-five and over. New Zealand's level of immunisation has been described as 'mediocre'. Grant et al suggest that in New Zealand structural and organisational issues in a general practice setting could affect immunisation delivery.[5] New Zealand does not have compulsory vaccination.

McIntyre et al suggest that in a pluralistic society compulsory vaccination is not an option. Vaccines fulfil the ethical criteria of a preventative measure in children. Justice and charity call parents to provide the best possible care for their child.[6]

People also dissent against vaccination for different reasons. One of the major concerns is vaccine safety. The risks need to be weighed up against the benefits, and the risk of an adverse event is often much smaller than the health risks associated with the disease.[7]

The use of animal products in vaccine production may influence whether vegans and vegetarians may vaccinate. Those of Muslim or Jewish faith may avoid products that include a pork derivative.[8] Some Catholics have raised concerns regarding vaccines produced from viruses cultured on cell lines that were derived from foetuses aborted during the 1960s. They are concerned that by using these vaccines they could be complicit in co-operation with the original abortion from which the cell lines were derived.

Ethically compromised vaccines

Of the eleven vaccines that are part of the New Zealand childhood immunisation schedule only two vaccines fall into the ethically compromised category. They are: the rubella vaccine (part of the measles, mumps, rubella vaccine), as well as vaccines that contain polioviruses grown in human diploid cells as opposed to Vero cells. Other vaccines not on the New Zealand immunisation schedule that are classified as ethically compromised are: chicken pox, zoster (shingles), Hepatitis A, and the rabies vaccine.

Ethically compromised vaccines are cultured in cell lines known as human diploid cells. The most commonly utilised cell lines are, WI-38 (Wistar Institute) and MRC-5 (Medical Research Council).[9] WI-38 was derived from lung tissue from a three month gestation foetus in 1964. Swedish parents who felt they had too many children, chose to abort the child. The MRC-5 cell line was derived from the normal lung tissue of a fourteen-

week-old foetus that was aborted in 1966. This abortion from a twenty-seven-year-old mother was for 'psychiatric reasons.' Stocks of cells are not replenished from repeated abortions.[10]

The rubella virus strain RA27/3 routinely used in the rubella vaccine was cultured from foetal tissue from an aborted foetus during the 1964 epidemic. The mother was exposed to rubella during the early stages of pregnancy.[11] Pruss notes that by using RA27/3, use is not made of foetal tissue but only of a virus which had invaded the foetus. He argues that the continued use of RA 27/3 is therefore more easily justified than the continued use of the cell lines derived from foetal tissue. As he observes, "It is not the body that is used, but the body's enemy."[12]

The history of the rubella vaccine provides an insight into the use of RA27/3 and human diploid cells. In 1969 and 1970 when rubella vaccines were first licensed around the world, the USA decided to licence vaccines developed using animal cell lines and other strains of the rubella virus. A number of problems gradually emerged. Vaccines developed using duck embryo and dog kidney strains caused significant joint reactions. Some people vaccinated with virus strains other than RA 27/3 when exposed to wild rubella virus became infected, while others vaccinated with strain RA 27/3 when exposed to wild rubella virus, did not exhibit symptoms of rubella infection. Europe had licensed the vaccine developed with RA 27/3 and the vaccine showed a respectable safety record. Thus, the USA decided that it would be preferable to use the rubella vaccine developed from RA 27/3.[13]

The Vatican statement on ethically compromised vaccines

In June 2003, an American organisation called the Children of God for Life wrote to the Vatican seeking advice about ethically compromised vaccines. In June 2005, they received a response from the Pontifical Academy for Life.[14] The then-President of the Pontifical Academy for Life, then-Bishop (now Cardinal) Elio Sgreccia noted in a cover letter that this statement had been approved by the Congregation for the Doctrine of the Faith.

To examine this issue, the statement draws upon an important Catholic principle, the Principle of Cooperation in Wrongdoing. When it considers the "doctors or parents who resort to these vaccines for their children," the statement provides four conclusions:

Firstly, when a choice exists between an ethically compromised vaccine and another vaccine which is not ethically compromised, the Pontifical Academy states that we have a "grave responsibility" to use the vaccine which is not ethically compromised. At the same time, however, the statement also recognises that there might be obstacles to doing this because "grave forms of allergy" have occurred with some of the uncompromised vaccines. If the risk of allergic reactions raises serious concerns, the duty to use uncompromised vaccines may cease.

Secondly, when no ethically acceptable alternative vaccines exist, doctors and families have a duty of "putting pressure on the political authorities and health systems so that other vaccines without moral problems become available." We should do this "by all means (in writing, through the various associations, mass media, etc.)."

Thirdly, as regards those ethically compromised vaccines without an acceptable alternative, "it is right to abstain from using these vaccines if it can be done without causing children, and indirectly the population as a whole, to undergo significant risks to their health." This might be possible, for example, if a vaccine offered protection only against a not very serious condition. It is not really possible if a vaccine protects against a serious condition.

Finally, if a failure to vaccinate exposes children and the general population to "considerable dangers to their health, vaccines with moral problems pertaining to them may also be used on a temporary basis." In these situations, the Pontifical Academy finds that there is a "*proportional reason*, in order to accept the use of these vaccines in the presence of the danger of favouring the spread of the pathological agent, due to the lack of vaccination of children."[15]

In footnote 16, the statement notes that rubella causes "grave congenital malformations in the foetus, when a pregnant woman enters into contact, even if it is brief, with children who have not been immunised and are carriers of the virus." It makes the chilling observation that "in this case, the parents who did not accept the vaccination of their own children become responsible for the malformations in question." Indeed, if some women in this situation decide to abort, the Pontifical Academy even states that the parents whose unvaccinated children carried this infection bear some moral responsibility for these abortions. All things considered, then, even allowing for the current need to use ethically compromised vaccines, vaccination against rubella and other serious diseases truly is the more pro-life decision.

Herd immunity

Herd immunity is when a significant proportion of a population (or 'herd') are vaccinated. Their presence provides a measure of protection for individuals who are not vaccinated or who have not developed immunity, even after vaccination or exposure to natural infection. Based on such variables as the virulence of the disease, scientists have calculated herd immunity thresholds for various diseases. This is the proportion of the population who must be disease-resistant in order to effectively prevent the persistence of that disease within that population. For example, rubella cannot persist within a community in which 80-85% of the population are disease-resistant. By contrast, pertussis (whooping cough) is more infectious, and its herd immunity threshold is 92-94%. Herd immunity can provide some protection for infants who are too young to be vaccinated, pregnant women, immunocompromised individuals and people with various

medical conditions who cannot always be vaccinated.[16]

By contributing to herd immunity, the decision to vaccinate is also a contribution to the common good of society. Vaccination benefits society as a whole and particularly benefits those vulnerable individuals who must rely on herd immunity for some measure of protection against disease. In contrast to those who contribute to the common good through vaccination, those who do not vaccinate benefit from herd immunity without contributing to it. Grabenstein reports that for this reason sociologists refer to those who do not vaccinate as "free-riders" or "free-loaders." He adds that "such behaviour" is "inequitable and uncharitable." Further, "if enough people 'free-load,' then the community's collective immunity dissipates and disease outbreaks resume."[17]

However, herd immunity has its limitations. Herd immunity can be weakened if the numbers of those who do not vaccinate grow. A further problem is the 'clustering of exemptions.' This means that those who do not vaccinate often congregate together in the same reasonably small geographic area, compromising herd immunity. Bliss provides a poignant historical example with his examination of the smallpox outbreak in Montreal in 1885, when some French Catholics refused vaccination.[18]

Conclusion

The Catholic Church does not dismiss the problem of ethically compromised vaccines. To the contrary, it calls for research and development of alternative, ethically acceptable vaccines. It also exhorts all people including parents to join in this call. However, until alternative vaccines are developed, it also accepts the use even of these ethically compromised vaccines in order to protect children, pregnant women, and the population as a whole from the risk of contracting serious disease. The teaching of the Catholic Church provides no support for the refusal of vaccination against serious disease, even if the only available vaccines are ethically compromised.

Endnotes

1 Richard A. McCormick, *Health and Medicine in the Catholic Tradition* (New York: Crossroad, 1987), 17.

2 Donald J. Keefe, "Tracking a Footnote," *Fellowship of Catholic Scholars* 9, no. 4 (1986): 6-7 at 7. Keefe's article details how an unsourced footnote and unsubstantiated comments can lead to inaccuracies in the historical record. Atkin and Tallett suggest that Pope Leo XII left vaccination as an optional practice, and that some priests at the time did see it as interfering with the natural processes of the body. For this, see Nicholas Atkin and Frank Tallett, Priests, *Prelates & People: A History of European Catholicism since 1750* (New York: I.B. Tauris & Co., 2003), 103.

3 Sanofi Pasteur, "Home Page," http://www.sanofipasteur.com/sanofi-pasteur2/front/index.jsp?siteCode=SP_CORP; GlaxoSmithKline, "Home Page," http://www.gsk.com.au/default.aspx; American Type Culture Collection, "Home Page," http://www.atcc.org/

4 Ministry of Health, "Medsafe (New Zealand Medicines and Medical Devices Safety Authority)," New Zealand Government, http://medsafe.govt.nz/

5 Cameron C Grant et al., "Factors associated with immunisation coverage and timeliness in New Zealand," *British Journal of General Practice* 60, no. 572 (Mar 2010): 113-20 at 113.

6 Peter B. McIntyre, Alison H. Williams, and Julie E. Leask, "Refusal of parents to vaccinate: dereliction of duty or legitimate personal choice?" *Medical Journal of Australia* 178, no. 4 (2003): 150-151 at 150.

7 The frequently asked questions page of the New Zealand Immunisation Advisory Centre website has comprehensive and succint responses to most fears that parents have regarding immunisation. http://www.immune.org.nz/frequently-asked-questions

8 Barbara E. Eldred et al, "Vaccine components and constituents: responding to consumer concerns," *Medical Journal of Australia* 184, no. 4 (2006): 170-5 at 173.

9 Pontifical Academy for Life, "Moral Reflections on Vaccines Prepared from Cells Derived from Aborted Human Fetuses," *The National Catholic Bioethics Quarterly* 6, no. 3 (2006): 541-550 at 543.(NCBQ) The statement is also available at Children of God for Life (CGL), http://www.cogforlife.org/vaticanresponse.pdf. The two records of the statement differ in that the third footnote in the NCBQ version is missing from the CGL version. As a result, all subsequent footnotes are numbered differently. In this article, we cite the NCBQ version.

10 Rene Leiva, "A Brief History of Human Diploid Cell Strains," *The National Catholic Bioethic Quarterly* 6, no. 3 (2006): 443-451 at 445; Pontifical Academy for Life, 542-3

11 Stanley A. Plotkin, "The History of Rubella and Rubella Vaccination Leading to Elimination," *Clinical Infectious Diseases* 43, Suppl 3 (2006): S165-6;

12 Alexander R. Pruss, "Complicity, Fetal Tissue, and Vaccines," *The National Catholic Bioethics Quarterly* 6, no. 3 (2006): 461-470 at 465.

13 Plotkin, S165-6.

14 Pontifical Academy for Life.

15 Ibid., 547-548. This teaching is repeated in the Congregation for the Doctrine of the Faith's most recent statement on bioethics, which states that "danger to the health of children could permit parents to use a vaccine which was developed using cells of illicit origin, while keeping in mind that everyone has a duty to make known their disagreement and to ask that their healthcare system make other types of vaccine available." For this, see Congregation for the Doctrine of the Faith, *Instruction on Certain Bioethical Questions (Dignitas Personae)*, #35, Holy See, http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_20081208_dignitas-personae_en.html

16 For a useful diagrammatic explanation of herd immunity, see (US) National Institute of Allergy and Infectious Diseases (NIAID), "Community Immunity ('Herd' Immunity), NIAID, http://www.niaid.nih.gov/topics/pages/communityimmunity.aspx

17 John D. Grabenstein, "The Value of Immunization for God's People," *National Catholic Bioethics Quarterly* 6, no. 3 (2006): 433-442 at 436-437.

18 Michael Bliss, *The Making of Modern Medicine – The Turning Points in the Treatment of Disease* (Chicago: University of Chicago Press, 2011), 22-30.

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