eReview
LATEST DEVELOPMENTS IN FAMILY FRIENDLY RESEARCH
INSTITUT DU MARIAGE ET DE LA FAMILLE CANADA IMFC INSTITUTE OF MARRIAGE AND FAMILY CANADA
No. 9
FEBRUARY 14, 2007

The **eReview** provides analysis on public policy relating to Canadian families and marriage. Below please find a commentary on the fact that while ethical vaccinations for children do exist, they are not made available in Canada.

An Injection that Stings

Even pro-lifers deserve a choice

By Peter Jon Mitchell, Research Analyst, Institute of Marriage and Family Canada

It's something many parents would find ironic, if not outright offensive: an infant vaccine that is manufactured from a human cell line derived from an aborted fetus. Pentacel®, manufactured by *Sanofi Aventis* and offered in public immunization programs, contains a polio component derived from a human cell line taken from a fetus aborted in the 1960s. Used in Canada since 1997, Pentacel® provides important protection for children against diphtheria, tetanus, and polio among other diseases.[1]

Some cell lines have been developed from animal cell clusters, but Pentacel® is produced from the human cell line MRC-5, and contains trace amounts of fetal DNA from the aborted fetus. [2] The MRC-5 cell strain was created from one aborted fetus, and numerous abortions fuelled the perfecting of cell line development.[3] For some, this may seem like a small sacrifice for the greater good, but cell line technology creates a precedent that has propelled large research companies to push ethical lines for big profits.

In the 1960s, cell line developers recorded the gender, developmental age, age of the mother and the family disease history of each aborted fetus used. In a 2006 article for the *National Catholic Bioethics Quarterly,* Ottawa-based physician Rene Leiva presented the histories of the most commonly used human cell lines, reporting on the known background of the fetuses.[4] The MRC-5 cell strain used to produce Pentacel® was developed from lung tissue acquired from a male fetus aborted at 14 weeks gestation. The 27-year-old mother living in the United Kingdom aborted the fetus for psychiatric reasons. Dr. Leiva is uncertain whether the mother knew that the fetus was used for cell line development.[5] The simple retelling of these histories illuminates the difficult situations and lost human lives from which cell lines were developed.

LINKS

FAMILYindex
A database of family research

INSTITUT DU MARIAGE ET DE LA FAMILLE CANADA IMFC INSTITUTE OF MARRIAGE AND FAMILY CANADA
IMFCanada Home Page

eReview
Previous eReviews

Ethical Options?

The manufacturer of Pentacel® also produces a vaccine called Pediacel® (for the same diseases) which is not derived from human cell lines. Although it is administered in the UK and has been approved for use in Canada since 2000, it has not been marketed here. Dr. Leiva suspects manufactures have only produced Pentacel® for the Canadian market in previous years because it was less expensive.[6] This prompted *Physicians for Life,* a national organization of pro-life doctors, to canvass the provinces and territories this past fall, asking them to procure Pediacel® when negotiating new contracts with vaccine suppliers. To date, Alberta is the lone jurisdiction to report that it will make Pediacel® available in the provincial immunization program after March 2007. Ontario is seeking to renew the bulk vaccine contract this spring, says Dr. Leiva, which makes this an ideal time for concerned parents to contact provincial health officials in that province.

Dr. Leiva, who strongly encourages parents to immunize their children, argues that the failure of provinces and territories to provide ethical alternative vaccines, especially when such a vaccine is readily available elsewhere amounts to "a moral coercion of conscience."[7]

Precedent and Payouts

The implications for not responding to this concern stretch beyond what some might consider a small sacrifice for the good of hundreds of thousands of Canadian children. The medical research industry, including big pharmaceutical companies, interprets the public's ethical paralysis concerning vaccine development to be a green light for the lucrative medical research industry to continue to fuel new technology with recycled human life.

For example, American scientist Leonard Hayflick PhD, who developed the human cell line WI-38 in 1960s and which is used in many vaccines today, was among 80 Nobel laureates who signed an open letter to President George W. Bush in 2001 asking for the continued support of "[f]ederal funding for research using human pluripotent stem cells."[8] The letter stated, "For the past 35 years many of the common human virus vaccines – such as measles, rubella, hepatitis A, rabies and poliovirus – have been produced in cells derived from a human fetus to the benefit of tens of millions of Americans. Thus precedent has been established for the use of fetal tissue that would otherwise be discarded."[9] Hayflick sits on the scientific advisory board for Advanced Cell Technology, a Massachusetts-based medical research company that announced in 2001 it had cloned a human embryo for therapeutic research, bragging that they are "focused on being the first to commercialize the most profitable application of regenerative medicine."[10] Medical developments that depended on aborted fetuses 40 years ago now serve as precedent for the systematic creation and

"THIS MAY SEEM LIKE A SMALL SACRIFICE FOR THE GREATER GOOD, BUT CELL LINE TECHNOLOGY CREATES A PRECEDENT THAT HAS PROPELLED LARGE RESEARCH COMPANIES TO PUSH ETHICAL LINES FOR BIG PROFITS."

destruction of human life in the name of medical research—and lucrative profits.

Asking the Right Questions

There are promising ethical options in stem cell research just as there were ethical options available to vaccine developers in the 1960s.[11] Medical research companies must acknowledge the responsibility to explore the hard ethical questions and need to be held accountable by the citizenry through government.[12] Dr. Gordon Giesbrecht, thermophysiology professor at the University of Manitoba captures the essence of this needed dialogue, writing, "We still have to determine in our own minds at what stage an embryo is worthy of protection. We need to get the correct answer to the first question 'When does it all begin?' Only then will we be able to address the next question, 'Where will it all end?'[13]

The justification of embryo destruction based on the precedent set by human cell line-based vaccine production rests on a faulty foundation and bypasses the fundamental ethical question raised by Giesbrecht and so many others about the beginning of life. Letting human cell line development stand as an ethical precedent for embryonic stem cell research by default denies Canadians choice—a choice that many Canadians value. Canadian taxpayers can begin to register their concerns with the government by demanding ethical options from their publicly funded immunization programs and by informing themselves on ethical medical treatments and asking questions about how all medical treatments evolve. Today's research will be tomorrow's treatments and seriously ill patients should not be left with unethical options.

---

[1] Public Health Agency of Canada (2005, Feb.1) Interchangeability of diphtheria, tetanus, acellular pertussis, polio, haemophilus influenzae type B combination vaccines presently approved fro use in Canada for children < 7 years of age. *Canada Communicable Disease Report* vol.31, acs.1. 4.

[2] Leiva, R. (2006, Autumn) A brief history of human diploid cell strains. *The National Catholic Bioethics Quarterly* vol.6 no.3, 443.

[3] Leiva, 446-450.

[4] Leiva, 444.

[5] Leiva, 446, 450.

[6] Aborted fetal tissue behind many vaccines (2006, May 17) *Today's Family News* retrieved from http://www.fotf.ca/tfn/life/stories/051006.html

[7] R. Leiva, personal communication, January 12, 2007.

[8] Nobel laureates' letter to President Bush (2001, February 21) *Washington Post* [Electronic version] retrieved from http://www.washingtonpost.com/ac2/wp-dyn?pagename=article&node=&contentId=A37117-2001Feb21&notFound=true
'Pluripotent' is derived from Latin meaning 'many powered.' Pluripotent stem cells possess the potential to develop into any tissue type or organ.
Pluripotent stem cell (2003) J.B. Leikin, M.S. Lipsky (eds.) *American Medical Association Complete Medical Encyclopaedia.* New York: Random House Publishing.

[9] Nobel laureates'

[10] Advanced Cell Technology: Company Overview retrieved January 15, 2007
http://www.advancedcell.com/company
For a transcript of an interview with Advanced Cell Technology President and CEO Dr. Michael West regarding cloning human embryos, see
http://archives.cnn.com/2001/TECH/science/11/25/cloning.west.cnna/

[11] See the *Journal of Experimental Medicine* for a study on the potential somatic human cells extracted from cord blood. Kögler,G. et al. (2004, July 19) A new human somatic stem cell from placental cord blood with intrinsic pluripotent differential potential *JEM* vol.200 no.2, 123-135.
http://www.jem.org/cgi/content/abstract/200/2/123
For a brief discussion on the viability of non embryonic sources of stem cells see Giesbrecht, G. (2006, spring/summer) When does it all begin? *IMFC Review*, 18-20.
http://www.imfcanada.org/article_files/IMFC_SpringReview.pdf

[12] For an analysis of the role of the new Assisted Human Reproductive Agency in Canada that oversees productive technologies, see Fraher,K. (2006, December 5) Which came first – the agency or the egg? *e-Review* no.4. http://www.imfcanada.org/article_files/December_%205_%202006.pdf

[13] Giesbrecht, G. (2006, spring/summer) When does it all begin? *IMFC Review*, 22.
http://www.imfcanada.org/article_files/IMFC_SpringReview.pdf