Ottawa, June 25, 1999

Mr. Cyril Nair
Chief Analyst
Health Statistics Division, Statistics Canada
R.H. Coats Building, 18th Floor
Tunney's Pasture
Ottawa, Ontario K1A 0T6

Dear Mr. Nair:

SUBJECT: STATISTICAL QUALITY—
ABORTION-RELATED MATERNAL DEATHS

After one year of research on the reporting procedures for abortion-related maternal deaths in Canada, I offer you my findings herewith. Thank you for accepting to review my report, including my recommendations. The results I obtained are as follows:

In Statistics Canada's *Causes of Death* publication, maternal deaths due to abortion:

1) are NOT reported under the "Pregnancy With Abortive Outcome" category, because of specific ICD coding rules to that effect (see Annex 1) .

2) are INSTEAD reported under a host of "EXTERNAL CAUSES", or "E CODES" (see Annex 2);

3) CAN ACTUALLY BE ATTRIBUTED TO PREGNANCY IN GENERAL, that is to any of the other three subcategories that fall under Chapter XI. , "Complications of Pregnancy, Childbirth and the Puerperium", namely "Complications Mainly Related to Pregnancy", "Complications Occurring in Labour and Delivery", and "Complications of the Puerperium". This happens because of an ambiguous "Maternal Death" question which appears on some (but not all) of the provinces' Registration of Death forms, where reporters are required to tick a box if the death was due to pregnancy, (with abortion, ectopic pregnancy, normal pregnancy, stillbirths, etc. all rolled into one) (see Annex 3);

4) show SIGNIFICANT DISCREPANCIES with those reported by the Ontario Chief Coroners' Office. Indeed, numerous maternal deaths are lost along the way from the Coroner's Office to the provincial Vital Statistics Office, (see Annex 3, years 1986, 1987, 1988); the Coroner's Office itself often has more deaths reported under its own "Aborted Foetus/Miscarriage" sub-category than under its "Total Maternal Deaths" category (see Annex 4, years 1991, 1994, 1995); and abortion/miscarriage-related deaths reported by the Ontario Coroner's Office simply do not show up in the Ontario Vital Statistics as either abortion or miscarriage-related (all this bearing in mind that the Coroner's table only shows deaths for abortions under 20 weeks).

Now that Statistics Canada is aware of the situation, it will only be logical for the organisation to take the necessary corrective measures pertaining to past and current mis/disinformation, and to avoid its repetition in the future. Indeed, as the situation now stands, it is universally believed that 1) there are no deaths due to abortion (because none are reported under that specific category) and 2) pregnancy in general is very dangerous, and much more so than abortion (which we now know is not necessarily the case).

The **corrective measures** which would apply here are the following:

1) A specific corrective article published in *Health Reports* (and a yearly article from now on):

   i) estimating and/or confirming the true, possible number of abortion-related maternal deaths ever since these deaths have been reported (For 1995, for example, there may have been as many as 119 abortion-related maternal deaths);

   ii) stating how pregnancy in general might not be as dangerous as originally thought because the maternal deaths reported under the categories other than "Pregnancy with abortive outcome" can also be abortion-related;

2) Making the reporting of maternal deaths and the breakdown by type (legal abortion, illegal abortion, non-abortion-related pregnancy) of these maternal deaths mandatory by law on all provincial registration of death forms (and the 90-day lapse of time following the maternal intervention should be preferred to the 42-day one, which three of the provinces who have the maternal death question have chosen);

3) Making a coroner's investigation mandatory by law into all maternal deaths. As things stand, coroners are only required to systematically investigate those that occurred within 24 hours of admission to a hospital or within 48 hours of an operation, hence numerous death registrations are sent directly from the attending physician/funeral homes without investigation. Not surprisingly, those certificates are very evasive as to the cause of death. Understandably, abortion clinics—where one out of three abortions take place—have no interest in tarnishing the reputation of their [for-profit] institution (350 $ - 1,000 $ CDN). Neither do hospitals, for that matter, even if profit is not involved (OHIP pays 107 $).

4) As 32.9 % of Medical Certificates of Death show major errors (Drs.Kathryn Myers and Donald Farquhar, "Improving the Accuracy of Death Certification", CMAJ, May 19,1998, 158 (10), p. 1317, and training of physicians decreased the major error rate to 15.7 %, the latter training should be made mandatory for physicians, coroners and medical coders.

5) The addition of a footnote in Statistics Canada's *Causes of Death* publication, following the "Pregnancy with Abortive Outcome" heading, referring clearly to the specific codes (E, N and regular) under which abortion-related maternal deaths can be reported.

6) A footnote in Statistic Canada's *Therapeutic Abortions* publication, under all *Complications* sections, in all tables under which complications are reported, referring to the specific codes (E,N and regular) under which abortion-related maternal deaths fall.

Mr. Nair, I savour the timeliness of my contribution, as I hear the Vital Statistics Division is in the process of reviewing the reporting procedures for mortality in Canada. I look forward to hearing of any positive development resulting from my recommendations and will feel privileged to have participated, in my own small way, to the betterment of Our Great Country.

Wishing you all the best in your endeavours,

Isabelle Bégin

c.c. The Honourable John Manley, Minister of Labour
Dr. Ivan Felligi, Chief Statistician of Canada
Ms. Ghislaine Villeneuve, Chief, Vital Statistics Program, Statistics Canada
Mr. Gary Catlin, Chief, Health Statistics, Statistics Canada, and
Co-chair, Vital Statistics Council for Canada
Ms. Shelley Gibson, Co-chair, Vital Statistics Council for Canada
Mr. Van Den Broecke, Director, International Statistics Institute
Dr. Linda Turner, Bureau of Reproductive and Child Health, Health Protection Branch, Health Canada
The Honourable Allan Rock, federal Minister of Health
All provincial ministers of Health
Secretary of State, *Citta del Vaticano*

Encl. 6 annexes

ANNEX 1

ICD CODING RULES APPLICABLE TO MEDICALLY-CAUSED AND MATERNAL DEATHS

p. 712 "*Rule 11. Old pneumonia, influenza and maternal conditions*. …Where the selected underlying cause is a maternal cause (630-678) and there is evidence that death occurred more than 42 days after termination of pregnancy, reselect the underlying cause as if the maternal cause had not been reported."

p. 712 "*Rule 12. Errors and accidents in medical care*. Where the selected underlying cause was subject to medical care and the reported sequence in Part I indicates explicitly that the death was a result of an error or accident occurring during medical care… regard the sequence of events leading to death as starting at the point at which the error or accident occurred." (p. 712)

p. xx 7. *Mortality Coding Rules*

"The [Ninth Revision] Conference [1975 of the International Statistical Classification of Diseases, Injuries, and Causes of Death] was made aware of the problems arising in selecting the underlying cause of death where this was the result of factors connected with surgical or other treatment. It was proposed that where an untoward effect of treatment is responsible for death then this should be coded rather than the condition for which the treatment was given. Although there were views expressed by some delegates that this interfered with the traditional underlying cause concept, the Conference preferred the former view and accordingly *Recommends* that the modification rule in Annex III be added to the existing rules for selection of cause of death for primary mortality tabulation.

"N" CODES UNDER WHICH OTHER ABORTION-RELATED DEATHS MAY FALL

p. xxi "Multiple condition coding and analysis should be attempted wherever possible, particularly for data relating to episodes of health care by hospitals (inpatient or outpatient), health clinics and family practitioners."

p. 701 "Where the selected cause is an injury, either the circumstances which gave rise to the injury [E codes] or the nature of the injury [N codes], or preferably both should be coded."

Source for above quotes: *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death,* Vol. 1, 1977, World Health Organisation, 1977

p. 735 "The principle of multiple coding of injuries should be followed wherever possible. Combination categories for multiple injuries are provided for use when there is insufficient detail as to the nature of the individual conditions, or for primary tabulation when it is more convenient to record a single code, otherwise component injuries should be coded separately."

Source for above quote : *ICD9*, vol. 2

ANNEX 2

XV11. *EXTERNAL CAUSES, INJURY AND POISONING* CODES (E800-E999) PUBLISHED IN STATISTICS CANADA'S *CAUSES OF DEATH* REPORT UNDER WHICH ABORTION-RELATED DEATHS ARE REPORTED

1) *Accidental poisoning by drugs, medicinal substances and biologicals* (E850-E858)
(accidents in the use of drugs and biologicals in medical and surgical procedures)
(excludes correct drug, properly administered in therapeutic or prophylactic dosage, as the cause of adverse effect (E930-E949))

E 858.5 Water, mineral and uric acid metabolism drugs
E 858.5 Urea
E 858.6 Prostaglandins
E 858.7 Urea, topical

2) *Misadventures to patients during surgical and medical care* (E870-E876)
(excludes surgical and medical procedures as the cause of abnormal reaction by the patient, without mention of misadventure at the time of procedure (E878-E-879))

E 870 Accidental cut, puncture, perforation or haemorrhage

E 870.1	Surgical operation
E 870.2	Infusion or transfusion
E 870.3	Injection or vaccination
E 870.5	Aspiration of fluid or tissue, puncture and catherization
E 870.8	Other specified medical care
E 870.9	Unspecified medical care

E 876 Other and unspecified misadventures during medical care

3) *Complication of medical procedures, without mention of misadventure* (E878-E879)
(surgical and medical procedures as the cause of abnormal reaction by the patient, without mention of misadventure at the time of procedure)
(excludes infusion and transfusion, without mention of misadventure in the technique of procedure (E 930-E 949))

E 878 Surgical operations and procedures
E 879 Other (medical procedure)

4) *Late effects of injuries, poisoning, toxic effect and other external causes* (E905-909)
(see p. 803)

5) *Late effects of accidental injury* (E929)

6) *Drugs, medicinal and biological substances causing adverse effects in therapeutic use* (E930-E949)
(correct drug, properly administered in therapeutic or prophylactic dosage, as the cause of the adverse effect)

E 930 Antibiotics
E 931 Other anti-infectants
E 932 Hormones and synthetic substitutes
E 933 Primarily systemic agents
E 934 Affecting Blood
E 935 Analgesics, antipyretics
E 935.3 Salicylates
- Amino derivatives of salicylic acid
- Salicylic acid salts

E936 Anticonvulsants
E 937 Sedatives
E 938 Anaesthetics
E 939 Psychotropic agents
E944 Water, mineral and uric acid metabolism drugs
E 944.3 Saluretics, in therapeutic use
E 944.4 Water, mineral and uric acid metabolism drugs
E 944.4 Urea, in therapeutic use
E 944.6 Other mineral salts, NEC
E 944.7 Uric acid metabolism drugs
E 945 Agents primarily acting on the smooth and skeletal muscles and respiratory system (uterine muscle contraction inducers)
E 945.0 Prostaglandins, in therapeutic use
E 946 Agents primarily affecting skin and mucous membranes, ophtalmological, otorhinolaryngological, and dental drugs
E 946.8 Urea, topical, in therapeutic use
E 947 Other and unspecified drugs and medicinal substances
E 947.4 Pharmaceutical excipients
E 949 Other vaccines and biological substances

7) *Poisoning by drugs, medicinal and biological substances* (960-979)
(overdose, wrong substance given)

8) *Complications of surgical and medical care, NEC (Not Elsewhere Classified)*
(see p. 867)

Primary source: "International Classification of Diseases, 9th Revision – Clinical Modification", (second edition, Sept. 1980), U.S. Department of Health and Human Services, Public Health Service – Health Care. Statistics Canada confirmed their use of the 1977 edition, but that there was no significant difference in practical terms.

Additional source: "Supplemental classification of external causes of injury and poisoning (E800-E999)", ICD-9, vol. 1, pp. 930, 968, 972, 980, 985, 1022, 1028.

Other codes, such as N codes and main codes, may also be used (see Annex 1)

ANNEX 3

OBSERVED DISCREPANCIES—CHIEF CORONER'S OFFICE OF ONTARIO, ONTARIO VITAL STATISTICS OFFICE, AND STATISTICS CANADA—MATERNAL DEATHS, 1986-1995

	MATERNAL DEATHS							
	ONTARIO CHIEF CORONER'S OFFICE (1)		ONTARIO VITAL STATISTICS OFFICE (2)			STATISTICS CANADA (3)		
	TOTAL MATERNAL DEATHS	MATERNAL DEATHS "ABORTED FŒTUS/MISCARRIAGE" (4)	TOTAL MATERNAL DEATHS	MATERNAL DEATHS – ABORTION	MATERNAL DEATHS – MISCARRIAGE	TOTAL MATERNAL DEATHS – ONTARIO	MATERNAL DEATHS – ABORTION (LEGAL) – ONTARIO	MATERNAL DEATHS – MISCARRIAGE - ONTARIO
1986	7	3	3	1	-	3	1	-
1987	4	-	3	-	-	3	-	-
1988	8	-	5	-	-	5	-	-
1989	4	2	5	-	-	5	-	-
1990	2	2	3	1	-	3	-	-
1991	2	7	3	-	-	3	-	-
1992	3	2	6	-	-	6	-	-
1993	8	-	8	-	-	8	-	-
1994	1	2	8	-	-	8	-	-
1995	1	2	7	-	-	7	-	-

(1) See Annexes 4 (a) and 4 (b)
(2) A matter of public record – consult Ontario Vital Statistics for tables
(3) A matter of public record – consult Statistic Canada. *Causes of Death* publication.
(4) Maternal deaths due to abortions performed under 20 weeks gestation only (see Annex 5). A second request has been filed through the Ontario *Access to Information* office for figures pertaining to maternal deaths due to abortions performed at 20 weeks or later).

The following observations can be drawn from the above table :

1) Some data from the Chief Coroner's Office obviously does not reach the Ontario Vital Statistics Office/Statistics Canada.

2) The Ontario Vital Statistics Office obviously often receives data from sources other than the Coroner's Office, and those numerous maternal deaths are therefore not investigated.

The preceding observations beg the following questions:

1) How is data lost from the Coroner's Office to the Ontario Vital Statistics Office ?

Answer:

i) The Coroner's Office issues a Medical Certificate of Death (MCD) that is not identical, or as complete as, its *investigative statement* (IS) (or *Coroner's Report*). The IS is strictly confidential information to which only the families of the deceased have access through strict request procedures. Data is therefore lost in the transcription process from the IS to MCD.

ii) The Coroner's Office does not use ICD coding, but text.

iii) More particularly, the *cause of death* category is a text file that is not retrievable electronically.

iv) The *factor of death* category for maternal deaths is all encompassing, "Maternal deaths – pregnancy and abortion".

v) The *factor of death* attributed to a maternal death can often be *Sudden and Unexpected* (as relayed by a spokesperson of the Ontario Chief Coroner's Office over the phone on Friday, June 11.)

vi) Maternal deaths are signalled on the MCD by the ticking off of a maternal death question (point 7), which reads as follows:

"If deceased was a female, did the death occur either during pregnancy (including abortion and ectopic pregnancy) or within 42 days thereafter? Yes □ No □"

The problem with this question is that it does not allow for the differentiation between a death due to normal pregnancy and one due to abortion.

The medical coder for the Ontario Vital Statistics Office reports that it also frequently occurs neither box is ticked off. In such cases, the death can only attributed to a "main" category (not E or N) (if it is not specified as medically-caused or accidental).

She (and the coder for Alberta) has relayed not ever coding an abortion-related death under the ICD code for abortion, because of ICD coding rules. She said that if the cause of death given on the MCD is specified as medically-caused or accidental, then the death is attributed to an external cause, i.e. E and/or N codes such as "Misadventures During Medical Care", post-operative shock, post-operative haemorrhage, accidental cut, perforation, poisoning, etc. (see Annex 2 for all possibilities).

She said that if the maternal box was checked off, and if the death is not specified as medically-caused or accidental, then the death is coded under the general pregnancy categories, i.e. "Complications Mainly Related to Pregnancy", "Complications Occurring in Labour and Delivery", and "Complications of the Puerperium", as there would oftentimes be no way of knowing whether the death was abortion-related or pregnancy-related.

It is also important to note that 1) only 7 out of the 13 provincial registration of death forms present the maternal death question; and 2) 32.9 % of Medical Certificates of Death show major errors (Drs. Kathryn Myers and Donald Farquhar, "Improving the Accuracy of Death Certification", CMAJ, May 19,1998, 158 (10), p. 1317. Training of physicians decreased the major error rate to 15.7 %. This training should be mandatory for physicians and medical coders.

2) What are the other sources of data of the Ontario Vital Statistics Office ?

Answer: Funeral homes and attending physicians, in clinics and hospitals.

3) How is it that some maternal deaths are not investigated when the Coroner's Act, section 10-1-c and 10-1-d stipulates that all maternal deaths must be reported for investigation ?

Answer: Coroner's investigations are not systematically conducted for maternal deaths after 24 hour's admission or 48 hours of operation (relayed by Ottawa General Hospital Medical Archives and confirmed by Ontario Chief Coroner's Office; also, the death may not be declared as a maternal death, i.e. the maternal question might not be answered at all, or no maternal question might even be asked on the registration of death form).

ANNEX 4 (a)

Office of the Chief Coroner
Province of Ontario

Total number of Maternal Deaths
1990 - 1997*

YEAR	TOTAL
1986	7
1987	4
1988	8
1989	4
1990	2
1991	2
1992	3
1993	8
1994	1
1995	1
1996*	4
1997*	9

* 1996 and 1997 are preliminary statistics. These figures may change one the statistical year is completed.

* 1998 statistics are not available at the present time.

February 10, 1999

Annex 4 (b)

Office of the Chief Coroner
Province of Ontario

Aborted Fetus / Miscarriage
1986 – 1997*

YEAR	ONTARIO	OTTAWA	TORONTO
1986	3	0	1
1987	0	0	0
1988	0	0	0
1989	2	0	2
1990	2	0	0
1991	7	0	2
1992	2	0	2
1993	0	0	0
1994	2	0	0
1995	2	0	1
1996 *	1	0	0
1997 *	0	0	0

* 1996 and 1997 are preliminary statistics. These figures may change once the statistical year is completed.

* 1998 statistics are not available at the present time.

April 13, 1999

-9.75-
ANNEX 5

Ministry of the
Solicitor General and
Correctional Services

Freedom of Information and
Protection of Privacy Services

P.O. Box 4100
200 First Avenue West
North Bay ON P1B 9M3

Telephone (705) 494-3080
Facsimile (705) 494-3081

Ministère du
Solliciteur général et des
Services correctionnels

Services d'accès à l'information et de
Protection de la vie privée

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Ontario

April 26, 1999

Ms Isabelle Bégin
10, Range Road
Ottawa, ON K1N 8J3

Dear Ms Bégin:

SUBJECT: REQUEST NUMBER 98-0941

Further to our recent telephone discussion, this letter is in response to your request for access to information from the Office of the Chief Coroner under the Freedom of Information and Protection of Privacy Act .

Attached is this regard, please find a copy of the following two statistical reports which are responsive to your request:

- Record 1 - Office of the Chief Coroner Statistics – Total Number of Maternal Deaths 1990-1997 (Please note the 1996 and 1997statistics are preliminary and the 1998 statistics are not yet available.)

  Please note that these statistics refer to maternal deaths which occurred during pregnancy or following pregnancy if the cause was reasonably attributed to the pregnancy.

- Record 2 - Office of the Chief Coroner Statistics – Aborted Fetus/Miscarriage 1986-1997. These statistics have been compiled to reflect cases for all of Ontario and for Ottawa and Toronto. (Please note the 1996 and 1997statistics are preliminary and the 1998 statistics are not yet available.)

  Please note that these statistics refer to the classification code for aborted fetus/miscarriage, which includes natural abortions (commonly known as miscarriages) or induced abortions of less than 20 weeks gestation.

.../2

ANNEX 6 A

RISKS OF MORTALITY DUE TO ABORTION

"The risk of mortality as related to weeks of gestation... is shown to be very significant in most statistical data; this risk increases, according to Tietze, by almost 30 % with each week of gestation and, according to Cates and Grimes, the relative risk of death approximately doubles for every two weeks of delay after eight menstrual weeks of gestation." (p. 94)

"Ten to fifteen per cent of all deaths due to abortion are caused by haemorrhage and occur mostly in the second trimester" (p.77)

"Embolism is a serious complication of second-trimester abortions... accounts for 24 % of abortion deaths" (p.87)

" Infection... virulent bacteria may spill into the blood stream and causes septicaemia (blood poisoning) and death... may become chronic pelvic inflammatory disease (PID)...Infection accounts fully for 25 % of all deaths resulting from abortion" (p. 85)

"Mortality due to hysterotomy is quite high" (p. 61)

"The incidence of total and major complications increases by about 20 % with each week of gestation from 7 through to 20 weeks" (p.68)

"delay of suction curettage from 8 to 10 weeks gestation increases the risk of major complication by 60 %. Delay of abortion from 8 to 16 weeks gestation increases the risk of major complication by 300 to 1,300 %, depending on the abortion technique used" (p.71)

"Anaesthesia...accounts for...fifteen percent of all causes of mortality" (p. 80)

"The major complication rate for hysterectomy [necessary in 6 % of cases studied in researcher David Reardon's landmark study of 1982] for 100 cases is 13.9" (p.63)

"Intra-amniotic instillation, or induction [of labour]...involves about 10 times more risk of complications than vacuum suction performed before 12 weeks." (p. 61)

"Pregnancies of less than six weeks carry a higher risk... [because] the cervix has not softened enough and dilatation, therefore, is more difficult and carries more risk of perforation and cervical injury. Also, menstrual extraction done early in pregnancy has a high rate of incomplete abortion with retention of tissue." (p. 69)

Source : Morgentaler, Henry. *Abortion and Contraception*, 1982, General Publishing, Don Mills, Ontario (30 Lesmill Rd., M3B 2T6) (ISBN 0-7736-0190-0)

ANNEX 6 B

DEATHS ACTUALLY REPORTED IN STATISTICS CANADA DOCUMENTS

1) Source: Wadhera, S., Millar, W., "Second-Trimester Abortions: Trends and Medical Complications", in *Health Reports*, 1994, vol. 6, no. 4:

> "There were **three** therapeutic abortion-related deaths during the study period [1974-91, that's 17 years or almost 2 million abortions], one associated with suction D & C and two associated with saline" (p. 451)

Considering the high risks of mortality indicated in the previous Annex, it is obvious that there would have been many more deaths due to abortion than the three-in-almost-20-years/2 million abortions reported above.

2) Source: *Selected Therapeutic Abortion Statistics, 1970-1994* (cat. no. 84-550):

> "Table 13. Total maternal deaths and abortion-related deaths, Canada, 1965-1991

	Total maternal deaths	Abortion-related deaths			
		Total	Spontaneous	Legal	Other/unspecified
1989-1991	38	4	-	-	4" (p.37)

For 1989-1991, in Ontario alone, there have been 11 maternal deaths due to abortion/miscarriage investigated by the Ontario Coroner's Office (and this only for abortions under 20 weeks' gestation) (See Annexes 5 and 8). Therefore, in the above Statistics Canada table, 7 maternal deaths are missing from Ontario alone (and not counting those deaths due to abortions beyond 20 weeks gestation, which the Coroner's Office is taking more time to report for some reason; figures should be obtained shortly).