

Homicide in Newfoundland: A Nine-Year Review

REFERENCE: Avis, S. P., "Homicide in Newfoundland: A Nine-Year Review," *Journal of Forensic Sciences*, JFSCA, Vol. 41, No. 1, January 1996, pp. 101-105.

ABSTRACT: Newfoundland has one of the lowest homicide rates in North America. The following study examined homicides in the province of Newfoundland for a nine-year period from 1985 to 1993. During this time there were 45 homicides, 25 male and 20 female victims with an average homicide rate of 0.74 per 100,000 persons. Sharp-force either by stabbing or incised wounds was the most common method followed by blunt-force and firearms. For sharp-force homicides the most frequent victim was a male between the ages of 31-40, while for firearm homicide the most frequent victim was female. A positive blood alcohol was found in almost 54% of victims tested but varied with the sex of the victim and the method of homicide used. Illicit drug use was not detected in any victim. The majority of victims knew their assailant, and the most frequent location for a homicide to occur were the victims home. There were two justifiable homicides during the study period.

KEYWORDS: forensic science, forensic pathology, pathology and biology, homicide, crime, Canada

Newfoundland enjoys one of the lowest homicide rates in North America. Given this fact the following study was undertaken to examine the characteristics associated with homicide in Newfoundland, and, where possible to compare such information with what is known about homicide in other locales.

Material and Method

The office of the Chief Forensic Pathologist maintains a file on all reportable deaths that occur within the province of Newfoundland. Included in such files is a sudden death scene report, a completed autopsy protocol, and the results of drug and alcohol analysis. For the present study all files that listed homicide as the manner of death were reviewed for the years 1985 through 1993. Homicide was defined as the death of an individual that resulted from the culpable or non culpable actions of another individual. Motor vehicle accidents were excluded. From each file the following information was recorded; the age and sex of the victim, the method of homicide (classified as sharp-force, blunt-force, firearms, asphyxia, etc.), type of weapon used, the results of drug and alcohol analysis, the day of the week and month of the year the fatal assault occurred, and the location at which the homicide took place. In addition, in cases where the assailant was identified, the relationship between victim and assailant was recorded.

¹Assistant Professor of Pathology (Forensic), Faculty of Medicine, Memorial University of Newfoundland, St. John's, Newfoundland, Canada; Deputy Chief Forensic Pathologist, Province of Newfoundland, St. John's, Newfoundland, Canada.

Received for publication 19 Jan. 1995; revised manuscript received 28 April and 7 June 1995; accepted for publication 9 June 1995.

Results

During the study period there was a total of 45 homicides, consisting of 25 male and 20 female victims. Two of the victims (both male) were the result of justifiable homicide as determined by judicial inquiry. (After a judicial review of the circumstances a provincial court judge found the peace officer justified in applying deadly force). The age groups of the victims are shown in Fig. 1. Methods of homicide used is shown in Fig. 2.

There was a total of 16 homicides due to sharp-force injury. Table 1 further defines these incidents with respect to the sex of

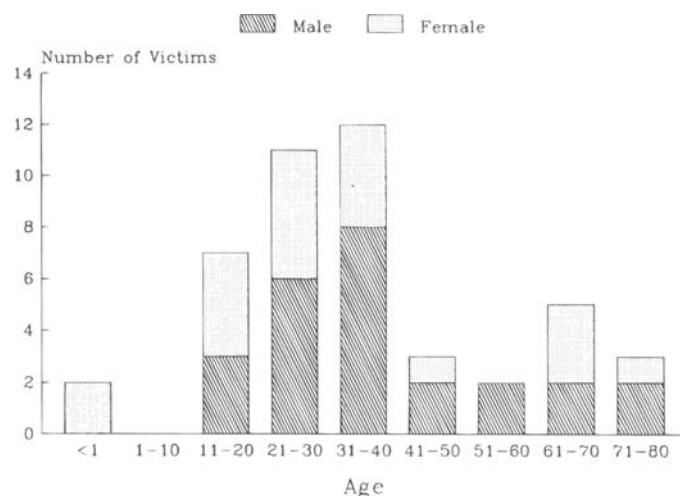


FIG. 1—Age distribution of homicide victims.

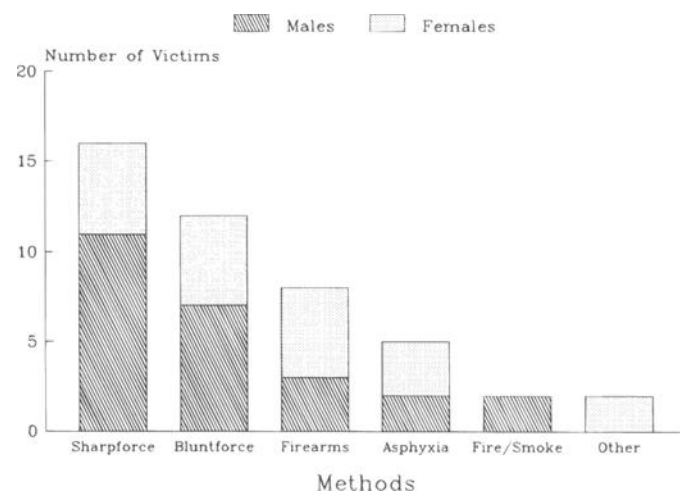


FIG. 2—Methods of homicide.

TABLE 1—Sharp-force homicide by sex and number of wounds.

	Sharp Force Wounds		Multiple
	N	Single	
Male	11	6	5
Female	5	0	5
Total	16	6	10

the victim, and whether there were single or multiple wounds. The weapon in all cases was a knife. The age and sex distribution of homicide victims by sharp force is shown in Fig. 3.

For blunt-force injury there was a total of 12 victims consisting of seven males and five females. Eight victims died of head injury (six male and two female) while three females died of multiple injury. Of these three one was an infant victim of child abuse. Two were the result of vehicular homicide implying that a motor vehicle was used as the weapon to inflict blunt force injury. The weapon used to inflict blunt force injury is presented in Fig. 4.

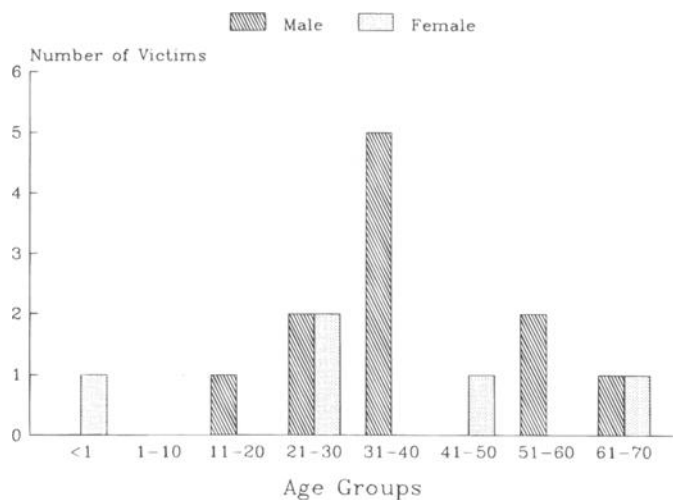


FIG. 3—Age and sex distribution of homicide victims by sharp-force.

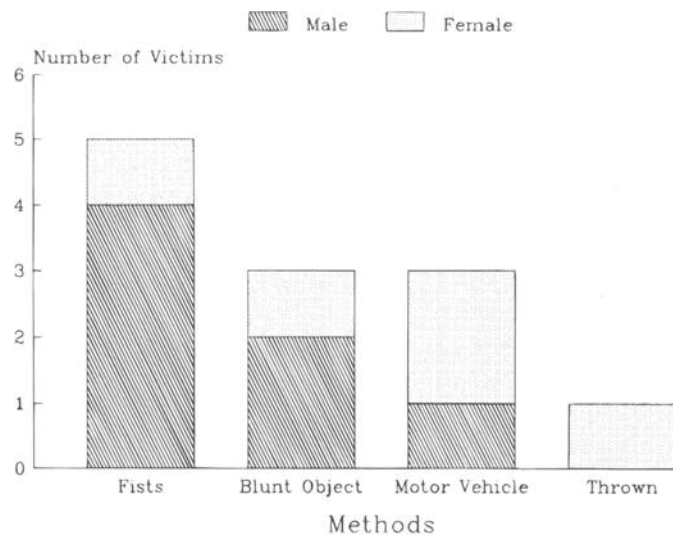


FIG. 4—Methods of blunt-force homicide.

TABLE 2—Homicides by firearms.

	Firearms		Shotgun
	N	Rifle	
Male	3	3 ^a	0
Female	5	0	5
Total	8	3	5

^aTwo cases represent justifiable homicide by police officers.

Of the five victims assaulted with a fist three died as a direct result of the injury, while two died as a result of a secondary impact with the floor. The age and sex distribution of homicide victims by blunt force is shown in Fig. 5.

Eight victims died as a result of gunshot wounds. Table 2 characterizes gunshot wounds with respect to the sex of the victim and weapon used. The age and sex distribution of homicide victims by firearms is shown in Fig. 6. Asphyxia was a method of homicide in five victims; the sex of the victim and method of asphyxia is shown in Table 3.

Alcohol analysis was performed on 39 victims, of which 21 (53.8%) tested positive. Alcohol status with respect to the sex of

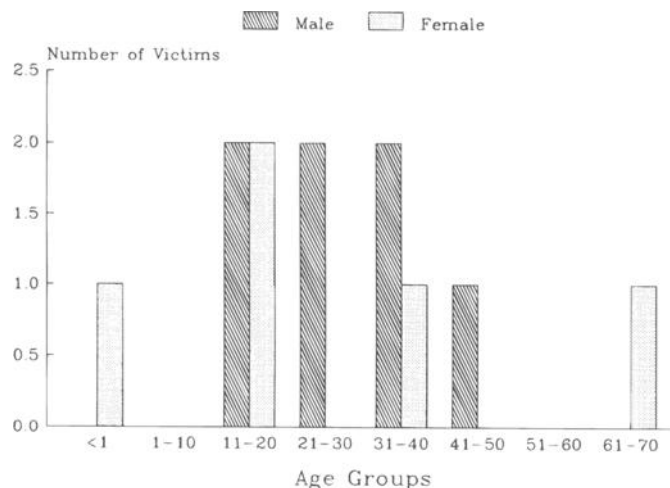


FIG. 5—Age and sex distribution of homicide victims by blunt-force.

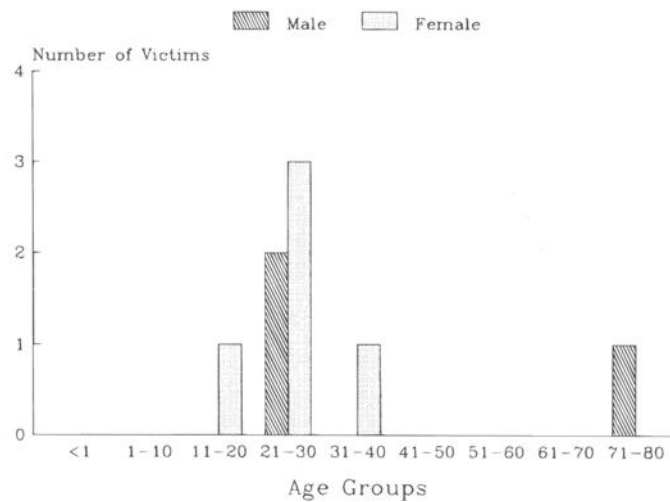


FIG. 6—Age and sex distribution of homicide victims by firearms.

TABLE 3—Homicides by asphyxia.

	Asphyxia			Choke Hold
	N	Manual	Ligature	
Male	2	1	0	1
Female	3	2	1	0
Total	5	3	1	1

the victim and method of homicide used is shown in Table 4, while the range of blood alcohol detected in victims is shown in Fig. 7. A drug screen was performed on 28 victims, with only three testing positive. In all three cases diazepam was detected, levels of which were in the therapeutic range. No illicit or street drugs were detected. The month of the year and day of the week the fatal assault took place is shown in Figs. 8, 9, respectively.

With respect to the relationship between victim and assailant, 40 of the 45 victims knew their assailant (Fig. 10). Of the remaining five victims two were killed by police officers, and one by nightclub security personnel. No information is available for the remaining two victims.

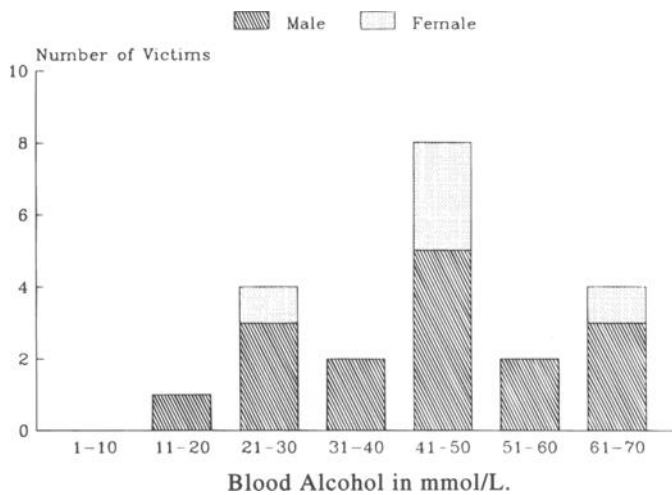


FIG. 7—Range of positive blood alcohol concentrations in victims (N = 21).

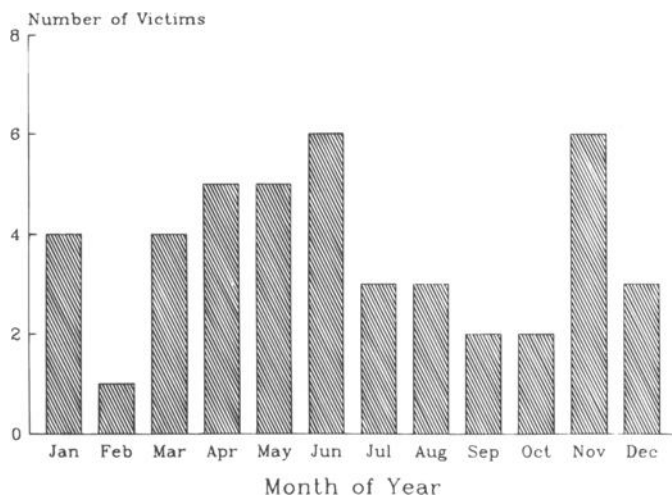


FIG. 8—Homicides by month of the year.

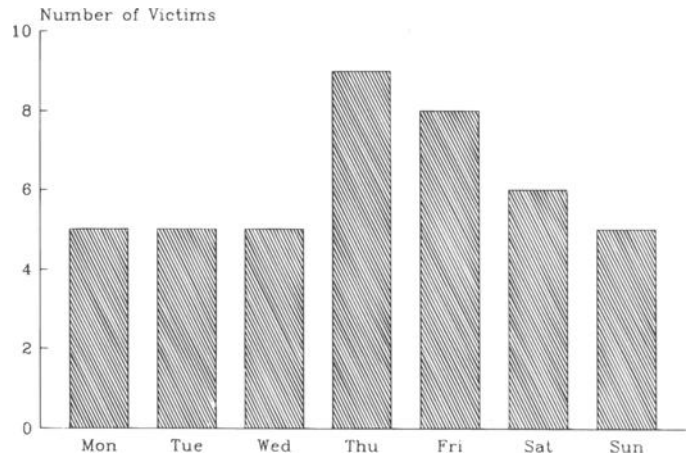


FIG. 9—Homicides by day of the week.

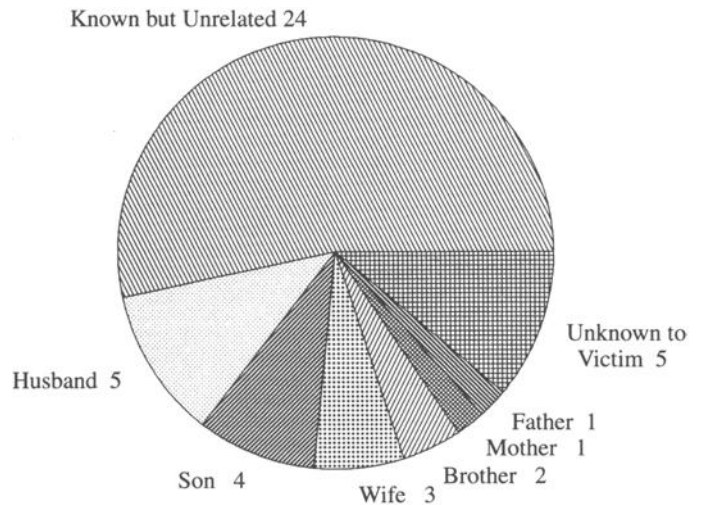


FIG. 10—Relationship of assailant to victim.

Of the 45 homicides, only five occurred during the committal of a felony, and included three break and entry's, one sexual assault, and one armed robbery. Four of the victims knew their assailant at the time of the homicide.

Two homicide victims (both female) were the result of a dyadic death in which the assailant first killed his victim, and then committed suicide. In terms of the location where the homicide occurred, the single most common place, 27 (%), occurred at the residence of the victim. Only two homicides occurred while the victim was at the workplace.

Discussion

Canada and the United States share a marked similarity in several respects. However, they differ greatly in homicide statistics. Over the past decade the homicide ratio between the United States and Canada has averaged 3:1 (1). In 1992 the average homicide rate for Canada was less than three per 100,000 persons (1). Common sense might attribute the higher homicide rate in the United States to be related to the higher rate of handgun ownership, however a study investigating this issue does not support such a conclusion (2).

The homicide rate for Newfoundland is consistently below the Canadian rate with an average over the last nine years of 0.74/

TABLE 4—Blood alcohol in victims as a function of sex and method of homicide.

Result	Blood Alcohol in Victims									
	Sharpforce		Bluntforce		Firearms		Asphyxia		Other	
	M	F	M	F	M	F	M	F	M	F
Positive	7	1	5	0	1	2	2	2	1	0
Negative	3	3	1	4	2	2	0	0	1	1
Not Done	1	1	1	1	0	1	0	1	0	1
% positive	70	25	83	0	33	50	100	100	50	0

100,000 and a range of 0.17/100,000 to 1.73/100,000. In 1992 Newfoundland had the second lowest homicide rate in the country (1).

Just over 50% of all homicides in the province occurred in the age groups from 21–40 years of age. Males in the age group of 31–40 years of age were the most frequent victims of homicide. Pesticide would appear to be uncommon.

When considering the methods of homicide used in Newfoundland, sharp-force is the most prevalent followed by blunt force and then firearms (Fig. 1). This is in contrast to the United States in which firearms, particularly handguns predominate as the most common method of homicide (3) and compares to homicide patterns in other countries outside North America (4–6).

Homicide by sharp force accounted for 35% of all homicides. Interestingly the popularity of sharp-force as a method of homicide in the study population would appear to be sex dependant, applying only to males, since sharp-force, blunt-force and firearms, as methods of homicide, are equally common in female victims. It is also interesting that all female victims of sharp-force homicide were subject to multiple wounds, as compared to males in which the majority of victims sustained only a single wound (Table 1). The most common victim of sharp-force homicide was a male between the ages of 31–40.

With respect to homicide by blunt-force, it represents the second most popular method in the province accounting for 27% of all homicides. The most frequent instrument used to inflict the injury were the assailant's fists, a factor that may be of relevance in terms of the intent of the assailant. In the majority of cases intracranial pathology was the lethal injury. Vehicular homicide would appear to be over represented in the population studied given the rarity of vehicular homicide in other studies (7). This increase in incidence resulted from a single incident in which an individual with a psychotic illness, under a delusional influence, killed two young females walking along a highway. The assailant was later found not guilty by reason of insanity. If one were to exclude this incident males would predominate as victims of blunt-force homicide.

Firearms as a method of committing homicide accounted for 18% of all homicide victims, but interestingly accounted for 25% of all female homicides along with sharp-force and blunt-force. Furthermore of the eight firearm homicides, females accounted for 62.5% of the victims. If one excludes justifiable homicides, females account for 83% of victims killed by firearms. This contrasts with a study in the United States in which males predominate as victims of firearm homicide (3).

A study examining the female homicide victim in Ohio showed that the vast majority of female homicide victims died by firearms, followed by blunt-force and sharp-force (8), which differs from the present study. The most frequent firearm utilized in the Ohio study was a rifled firearm followed by shotguns, which again is in contrast to the above study in which all female victims died of

shotgun injury. This is most likely a reflection of firearm availability, since a similar pattern is seen in suicidal firearm deaths in the province (9).

Asphyxia accounted for only 11% of homicide victims with manual strangulation being the most frequent. Females were the predominant victims of asphyxial homicide, although there was no association with sexual assault. The one case of homicide associated with a sexual assault was as a result of blunt-force injury, although one case of asphyxia occurred during or following consensual sexual intercourse.

The role of alcohol in the homicide victim deserves mention. It has long been suggested that alcohol consumption is a risk factor for becoming a homicide victim, possibly as a consequence of victim precipitation (3,10,11). Indeed in the present study a positive blood alcohol was present in almost 54% of victims tested, a finding consistent with studies in other locations (10,12). In the above study however a positive blood alcohol varied with both the sex and method of homicide used. Despite the fact that there were more homicide victims who had consumed alcohol than those who had not, unless alcohol consumption in the population is taken into account one cannot conclude with certainty that alcohol consumption is a risk factor. One study that examined this question in 1980 concluded that in the United States while alcohol consumption was positively correlated with the rate of suicide, it was not correlated with the rate of homicide. The study also concluded that alcohol consumption did not correlate with either the suicide rate or homicide rate in Canada or 23 other countries (13).

It is also of interest that in the present study drug use in homicide victims was uncommon and restricted to therapeutic levels of diazepam, with no illicit drugs detected. This contrasts with studies from the United States in which illicit drug use is common amongst homicide victims, especially cocaine and occasionally heroin (12,14,15). In this respect it is interesting to note that in the last nine years only two individuals in the province have tested positive for cocaine at autopsy, both of which were accidental deaths. Heroin (morphine) detection at autopsy is unheard of.

While the low homicide rate in Newfoundland is probably multi-factorial, illicit drug use must be considered as a possible factor. The incidence of cocaine related crime (as indicated by actual incidents of possession, trafficking and importing) in Newfoundland was one tenth the Canadian average in 1992 while provinces with higher homicide rates had a higher incidence of cocaine related crime. Furthermore the consistent absence of street drugs in the body fluids of homicide victims would suggest that the deaths were unrelated to the drug culture.

With respect to victim assailant relationships, the study confirms that one is more likely to be killed by an acquaintance than a stranger, and unlikely to be killed during the committal of a felony. Furthermore the most common location for a homicide to occur is in the victims home.

References

- (1) Statistics Canada, "Canadian Crime Statistics 1992," Catalogue 85-205.
- (2) Centerwall BS. Homicide and the prevalence of handguns: Canada and the United States, 1976 to 1980. *Am J Epidemiol* 1991; 134(11):1245-60.
- (3) Muscat JE, Huncharek MS. Firearms and adult, domestic homicides the role of alcohol and the victim. *Am J Forensic Med Pathol* 1991;12(2):105-10.
- (4) Scott, KWM. Homicide patterns in the west midlands. *Med Sci Law* 1990;30(3):234-8.
- (5) Duflou JALC, Lamont DL, Knobel GJ. Homicide in Cape Town, South Africa. *Am J Forensic Med Pathol* 1988;9(4):290-4.
- (6) Lo M, Vuletic JC, Koelmeyer TD. Homicides in Auckland, New Zealand a 14 year study. *Am J Forensic Med Pathol* 1992;13(1):44-9.
- (7) Copeland, AR. True vehicular homicide. *Am J Forensic Med Pathol* 1986;7(4):305-7.
- (8) Frazer, M. The female homicide victim: trends in a metropolitan county from 1969 to 1980. *J Forensic Sci* 1983;28(3):577-87.
- (9) Avis, SP. Suicidal gunshot wounds. *Forensic Sci Int* 1994;67:41-7.
- (10) Goodman RA, Mercy JA, Loya F et al. Alcohol use and interpersonal violence: alcohol detected in homicide victims. *Am J Pub Health* 1986;76(2):144-9.
- (11) Wolfgang ME, Strohm RB. The relationship between alcohol and criminal homicide. *Q J Studies Alcohol* 1956;17:411-25.
- (12) Garriott JC. Drug use among homicide victims changing patterns. *Am J Forensic Med Pathol* 1993;14(3):234-7.
- (13) Lester D. Alcohol and suicide and homicide. *J Studies Alcohol* 1980;141(11):1220-3.
- (14) Harruff RC, Francisco JT, Elkins SK, et al. Cocaine and homicide in Memphis and Shelby County: an epidemic of violence. *J Forensic Sci* 1988;33(5):1231-7.
- (15) Spitz WU. Drugs and homicide. *Am J Forensic Med Pathol* 1989;10(1):90.

Address requests for reprints or additional information to
 Simon P. Avis, M.D.
 Division of Pathology
 Health Science Center
 St. John's, Newfoundland
 Canada A1B 3V6