

# **Appendix I**

Fort Chipewyan Update Feb 7, 2014

Prepared by
Surveillance & Reporting
Cancer Measurement Outcomes Research and Evaluation
CancerControl
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# Appendix I

#### **General methods:**

We calculate cancer statistics using data from the Alberta Cancer Registry, a database with information about everyone who has been diagnosed and/or has died from cancer in the province. We also use population data provided by Alberta Health (number of people within five year age groups living in a postal code in a given year).

For community requests such as the one completed here, we typically calculate Indirect Standardized Incidence Ratios (ISIRs) comparing the number of *observed* cancer cases in an area to the number *expected* based on cancer rates in a reference population (population of Alberta). This comparison helps us understand whether the number of cases observed is different from what would be expected (higher or lower) if the experience of the reference population had applied.

## **Details of current request methods:**

For this request, we calculated ISIRs comparing the number of observed cases in the Fort Chipewyan area (T0P 1B0) with the number expected based on cancer rates in Alberta.

All primary invasive cancer cases diagnosed between 1992 and 2011 (inclusive) were extracted from the Alberta Cancer Registry for analysis. We excluded non-melanoma skin cancer from the analysis, which is standard for cancer statistic calculations. Also, because coding for bladder cancer has changed over the study time period, we included both invasive and *in situ* bladder cancer cases in the analysis. We calculated ISIRs and 95% confidence intervals for all cancers combined and for each type of cancer. The ISIRs were standardized by age, sex, and calendar year to account for variations among the two populations. Further, we analyzed cancer rates among males and females separately. Childhood cancers (0 to <15 years) were also considered separately.

To assess changes over time, the 20 year period (1992-2011) was subdivided into four five-year periods: 1) 1992-1996, 2) 1997-2001, 3) 2002-2006, and 4) 2007-2011. The twenty-year period from 1992-2011 was also assessed.

#### Results:

In Table 1, we have provided a list of all cancers that have occurred in individuals who were residents of Fort Chipewyan at the time of diagnosis from 1992-2011 as well as the number of cases observed for each cancer type.

In Table 2, we have provided results for all invasive cancer types combined (excluding non-melanoma skin cancer) as well as type-specific results for each cancer type observed in the region from 1992-2011. The table contains the number of observed and expected cases of cancer (for both sexes combined, females, and males), as well as Indirect Standardized Incidence Ratios (ISIRs) and 95% Confidence Intervals (CI) by sex, and time period. See below for how we interpret these results.

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Internal\_Appendix I\_Fort\_Chipewyan\_2013-09CR | Created 2013-09-30 | Updated 2014-02-07 | Page 2 of 12



There are limitations to the interpretations that can be made from information based on small numbers of cases as is the situation for many of the cancer types observed in this region. Generally, case counts <5 are not released due to both privacy concerns for patients, as well as data interpretation considerations; however, we have chosen to share all the cancerspecific data for this region over the 20 year time period because much of it has been previously reported and due to the high level of concern in the community. The information shared here should be interpreted with care. Surveillance information based on small numbers and in small populations is more vulnerable to random fluctuation and over-interpretation.

If you have specific questions about cancer sites that are not included in these results, please contact us.

### Interpretation of results:

In cancer incidence investigations such as these, we assess four attributes in combination to help us determine whether cancer incidence is changing (and, therefore, what our next steps are):

# 1) Value of the ISIR

The ISIR is the ratio of the number of new cancer cases observed in a geographic area to that which would be expected if the incidence rates for the reference population applied. For example, an ISIR of 2.0 suggests that the number of cases observed is twice the number that would be expected.

- 2) Does the 95% Confidence Interval (95% CI) include '1'?

  To interpret the value of the ISIR it is critical to evaluate the location of the 95% confidence interval relative to the number '1'. If the range includes '1', there is no evidence to suggest that the number of observed cancer cases is different from the number expected. If the range does not include '1' and sits above '1', we are 95% confident that the number of cases observed is higher than what would be expected based on the reference population. The opposite is also true; if the range does not include '1' and sits below '1', we are 95% confident that the number of cases observed is lower than expected.
- 3) Is the 95% CI wide or narrow?

  A 95% confidence interval is a range of values around an ISIR within which we are 95% confident, or sure, that the 'true' result lies. A narrow 95% CI allows for more precision in interpretation. Wide 95% CIs often occur when there are a small number of cases.
- 4) Are the results consistent? When interpreting the results, we look for patterns in the data over time. If the values of the ISIRs are inconsistent over time, they may not be as meaningful as an increasing or decreasing trend in ISIRs, or stable ISIRs across the time periods studied. Furthermore,



large ISIRs observed in earlier time periods, but not in later time periods, are likely not cause for current concern.

Based on the interpretation of the results, Surveillance & Reporting, CancerControl generally does one of the following:

- 1) Regular monitoring continues. This action is taken if the ISIRs in the most recent time period are not statistically significant, and the ISIRs are not increasing over time.
- 2) Refer results to the local Alberta Health Services Medical Officer of Health and continue monitoring. This action is taken if the 95% confidence intervals are narrow and the following applies: the ISIRs in the most recent time period are not statistically significant but there is an increasing trend over time.
- 3) Refer results to the Senior Medical Officer of Health, Alberta Health Services and the Chief Medical Officer of Health, Alberta Health and continue monitoring. This action is taken if the ISIRs observed in the most recent time period are statistically significant, and the 95% confidence interval is narrow.

#### **Data Notes:**

Please note that the numbers provided are provisional as 2-3% of cases may be registered in subsequent years. The method for coding cancers in the Alberta Cancer Registry may have varied over time; therefore, caution should be exercised with comparing these data to those of previous years.

The Alberta Cancer Registry uses international coding systems [based on the International Classification of Disease – Oncology (ICD-O)] for coding cancers. The ICD-O and related systems are updated periodically. These changes may impact trend analysis for certain cancer sites.

These analyses were performed by Janine Walsh (Environmental Exposures Analyst), and quality assured by Li Huang (Senior Surveillance Analyst) and Dr. Marcy Winget (Acting Director, Surveillance & Reporting).



**Table 1**: Summary table outlining the number of cases observed in the Fort Chipewyan area<sup>†</sup> by cancer type (listed alphabetically) from 1992-2011.

Type of Cancer	Observed #
Biliary Tract, other & unspecified	3
Brain	1
Breast	6
Bronchus/Lung	14
Cervix Uteri	4
Colon	13
Connective, Subcutaneous & Other Soft Tissues	2
Endometrium	3
Esophagus	2
Hodgkin Lymphoma	1
Kidney	4
Leukemia	4
Liver & Intrahepatic Bile Ducts	1
Melanoma of Skin	1
Multiple Myeloma & Plasmacytoma	2
Nonhodgkin Lymphoma	6
Prostate Gland	12
Unknown Primary	2
All cancers excluding Non-Melanoma Skin	81



**Table 2:** Observed and expected number of cancer cases for all cancers combined,\* and all observed cancer types as well as Indirect Standardized Incidence Ratios for the Fort Chipewyan area<sup>†</sup> compared to the number expected based on Alberta rates; 1992-1996, 1997-2001, 2002-2006, 2007-2011 and the entire period 1992-2011.

Cancer Type	Sex	Period	Observed	Expected	ISIR <sup>‡</sup>	95% CI <sup>§</sup>
All Cancers	Both	1. 1992-1996	18	~16	1.10	0.65, 1.74
Combined		2. 1997-2001	19	~18	1.03	0.62, 1.61
Excluding Non- Melanoma Skin		3. 2002-2006	24	~21	1.12	0.72, 1.66
Cancer		4. 2007-2011	20	~23	0.88	0.54, 1.36
		1992-2011	81	~79	1.03	0.82, 1.28
	Female	1. 1992-1996	6	~6	0.96	0.35, 2.10
		2. 1997-2001	6	~7	0.81	0.30, 1.77
		3. 2002-2006	10	~9	1.17	0.56, 2.14
		4. 2007-2011	9	~9	0.97	0.44, 1.84
		1992-2011	31	~31	0.99	0.67, 1.40
	Male	1. 1992-1996	12	~10	1.19	0.61, 2.08
		2. 1997-2001	13	~11	1.18	0.63, 2.02
		3. 2002-2006	14	~13	1.09	0.59, 1.82
		4. 2007-2011	11	~13	0.82	0.41, 1.46
		1992-2011	50	~47	1.05	0.78, 1.39
Biliary Tract,	Both	1. 1992-1996	0	~0	0.00	0.00, 82.00
other &		2. 1997-2001	1	~0	15.87	0.40, 88.42
unspecified		3. 2002-2006	2	~0	22.97	2.78, 82.98
		4. 2007-2011	0	~0	0.00	0.00, 41.54
		1992-2011	3	~0	10.57	2.18, 30.89
	Female	1. 1992-1996	0	~0	0.00	0.00, 236.56
		2. 1997-2001	0	~0	0.00	0.00, 128.82
		3. 2002-2006	0	~0	0.00	0.00, 115.81
		4. 2007-2011	0	~0	0.00	0.00, 114.14
		1992-2011	0	~0	0.00	0.00, 34.03
	Male	1. 1992-1996	0	~0	0.00	0.00, 125.51
		2. 1997-2001	1	~0	29.09	0.74, 162.07
		3. 2002-2006	2	~0	36.22	4.39, 130.85
		4. 2007-2011	0	~0	0.00	0.00, 65.32
		1992-2011	3	~0	17.10	3.53, 49.97



Brain							
Section   Sect	Brain	Both	1. 1992-1996	0	~0	0.00	0.00, 12.53
Head			2. 1997-2001	1	~0	3.36	0.09, 18.74
Hernale			3. 2002-2006	0	~0	0.00	0.00, 11.09
Female 1.1992-1996 0 -0 0.00 0.00, 34.65 2.1997-2001 1 -0 9.37 0.24, 52.19 3.2002-2006 0 -0 0.00 0.00, 29.75 4.2007-2011 0 -0 0.00 0.00, 32.23 1992-2011 1 -0 2.21 0.06, 12.34  Male 1.1992-1996 0 -0 0.00 0.00, 19.62 2.1997-2001 0 -0 0.00 0.00, 17.69 4.2007-2011 0 -0 0.00 0.00, 17.69 4.2007-2011 0 -0 0.00 0.00, 17.69 4.2007-2011 0 -0 0.00 0.00, 17.69 4.2007-2011 0 -1 0.00 0.00, 4.59  Breast Female 1.1992-1996 0 -2 0.00 0.00, 2.03 2.1997-2001 1 -2 0.44 0.01, 2.47 3.2002-2006 2 -3 0.80 0.10, 2.88 4.2007-2011 3 -3 1.08 0.22, 3.16 1992-2011 6 -9 0.64 0.24, 1.40  Bronchus/Lung Both 1.1992-1996 4 -2 1.85 0.50, 4.73 2.1997-2001 2 -2 0.89 0.11, 3.23 3.2002-2006 5 -3 1.90 0.62, 4.44 4.2007-2011 3 -3 1.07 0.22, 3.14 1992-2011 14 -10 1.43 0.78, 2.39  Female 1.1992-1996 2 -1 3.19 0.39, 11.54 2.1997-2001 2 -1 2.56 0.31, 9.26 3.2002-2006 3 -1 3.05 0.63, 8.91 4.2007-2011 1 -1 0.91 0.02, 5.08 1992-2011 8 -3 2.29 0.99, 4.52  Male 1.1992-1996 1 -0 0.45 0.35, 2.06  Male 1.1992-1996 1 -0 0.55 0.35, 2.06  Cervix Uteri Female 1.1992-011 6 -6 0.95 0.35, 2.06  Cervix Uteri Female 1.1992-001 1 -0 4.07 0.10, 2.267 3.2002-2006 0 -0 0.00 0.00, 0.00, 15.01			4. 2007-2011	0	~0	0.00	0.00, 11.17
Reast   Female   Both   1.1992-1996   4			1992-2011	1	~1	0.80	0.02, 4.44
Second		Female	1. 1992-1996	0	~0	0.00	0.00, 34.65
A			2. 1997-2001	1	~0	9.37	0.24, 52.19
1992-2011			3. 2002-2006	0	~0	0.00	0.00, 29.75
Male			4. 2007-2011	0	~0	0.00	0.00, 32.23
Breast   Female			1992-2011	1	~0	2.21	0.06, 12.34
Breast  Female  1. 1992-1996  2. 1997-2001  Bronchus/Lung  Both  1. 1992-1996  4. 2007-2011  Breast  Breast  Breast  Breast  Breast  Female  1. 1992-1996  2. 1997-2001  3. 2002-2006  4. 2007-2011  3. 2002-2006  4. 2007-2011  3. 2002-2006  4. 2007-2011  3. 2002-2006  4. 2007-2011  3. 2002-2006  4. 2007-2011  4. 2007-2011  5. 2002-2006  5. 2008  6. 2008		Male	1. 1992-1996	0	~0	0.00	0.00, 19.62
Breast  Female    4. 2007-2011   0			2. 1997-2001	0	~0	0.00	0.00, 19.36
Breast Female			3. 2002-2006	0	~0	0.00	0.00, 17.69
Breast         Female         1. 1992-1996         0         ~2         0.00         0.00, 2.03           2. 1997-2001         1         ~2         0.44         0.01, 2.47           3. 2002-2006         2         ~3         0.80         0.10, 2.88           4. 2007-2011         3         ~3         1.08         0.22, 3.16           1992-2011         6         ~9         0.64         0.24, 1.40           Bronchus/Lung         Both         1. 1992-1996         4         ~2         1.85         0.50, 4.73           2. 1997-2001         2         ~2         0.89         0.11, 3.23         3. 2002-2006         5         ~3         1.90         0.62, 4.44           4. 2007-2011         3         ~3         1.07         0.22, 3.14         1992-2011         14         ~10         1.43         0.78, 2.39           Female         1. 1992-1996         2         ~1         3.19         0.39, 11.54         2. 1997-2001         2         ~1         3.19         0.39, 11.54           2. 1997-2001         2         ~1         3.19         0.39, 11.54         2. 1997-2001         3         ~1         3.05         0.63, 8.91           4. 2007-2011         1			4. 2007-2011	0	~0	0.00	0.00, 17.09
2. 1997-2001			1992-2011	0	~1	0.00	0.00, 4.59
Section   Sect	Breast	Female	1. 1992-1996	0	~2	0.00	0.00, 2.03
## Bronchus/Lung    Both   1. 1992-1996   4			2. 1997-2001	1	~2	0.44	0.01, 2.47
Bronchus/Lung  Both  1. 1992-1996  2. 1997-2001  2. 1997-2001  3. 2002-2006  4. 2007-2011  3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3			3. 2002-2006	2	~3	0.80	0.10, 2.88
Bronchus/Lung    Both   1. 1992-1996   4			4. 2007-2011	3	~3	1.08	0.22, 3.16
Cervix Uteri   Female			1992-2011	6	~9	0.64	0.24, 1.40
3. 2002-2006   5	Bronchus/Lung	Both	1. 1992-1996	4	~2	1.85	0.50, 4.73
Harmonia			2. 1997-2001	2	~2	0.89	0.11, 3.23
Female 1. 1992-2011 14 ~10 1.43 0.78, 2.39 Female 1. 1992-1996 2 ~1 3.19 0.39, 11.54 2. 1997-2001 2 ~1 2.56 0.31, 9.26 3. 2002-2006 3 ~1 3.05 0.63, 8.91 4. 2007-2011 1 ~1 0.91 0.02, 5.08 1992-2011 8 ~3 2.29 0.99, 4.52  Male 1. 1992-1996 2 ~2 1.30 0.16, 4.70 2. 1997-2001 0 ~1 0.00 0.00, 2.53 3. 2002-2006 2 ~2 1.21 0.15, 4.39 4. 2007-2011 2 ~2 1.18 0.14, 4.26 1992-2011 6 ~6 0.95 0.35, 2.06  Cervix Uteri Female 1. 1992-1996 1 ~0 4.56 0.12, 25.40 2. 1997-2001 1 ~0 4.07 0.10, 22.67 3. 2002-2006 0 ~0 0.00 0.00, 15.01 4. 2007-2011 2 ~0 9.35 1.13, 33.77			3. 2002-2006	5	~3	1.90	0.62, 4.44
Female 1. 1992-1996 2 ~1 3.19 0.39, 11.54 2. 1997-2001 2 ~1 2.56 0.31, 9.26 3. 2002-2006 3 ~1 3.05 0.63, 8.91 4. 2007-2011 1 ~1 0.91 0.02, 5.08 1992-2011 8 ~3 2.29 0.99, 4.52 Male 1. 1992-1996 2 ~2 1.30 0.16, 4.70 2. 1997-2001 0 ~1 0.00 0.00, 2.53 3. 2002-2006 2 ~2 1.21 0.15, 4.39 4. 2007-2011 2 ~2 1.18 0.14, 4.26 1992-2011 6 ~6 0.95 0.35, 2.06 Cervix Uteri Female 1. 1992-1996 1 ~0 4.56 0.12, 25.40 2. 1997-2001 1 ~0 4.07 0.10, 22.67 3. 2002-2006 0 ~0 4.07 0.10, 22.67 3. 2002-2006 0 ~0 9.35 1.13, 33.77			4. 2007-2011	3	~3	1.07	0.22, 3.14
2. 1997-2001   2			1992-2011	14	~10	1.43	0.78, 2.39
3. 2002-2006   3		Female	1. 1992-1996	2	~1	3.19	0.39, 11.54
Male			2. 1997-2001	2	~1	2.56	0.31, 9.26
Male			3. 2002-2006	3	~1	3.05	0.63, 8.91
Male 1. 1992-1996 2 ~2 1.30 0.16, 4.70 2. 1997-2001 0 ~1 0.00 0.00, 2.53 3. 2002-2006 2 ~2 1.21 0.15, 4.39 4. 2007-2011 2 ~2 1.18 0.14, 4.26 1992-2011 6 ~6 0.95 0.35, 2.06  Cervix Uteri Female 1. 1992-1996 1 ~0 4.56 0.12, 25.40 2. 1997-2001 1 ~0 4.07 0.10, 22.67 3. 2002-2006 0 ~0 0.00 0.00, 15.01 4. 2007-2011 2 ~0 9.35 1.13, 33.77			4. 2007-2011	1	~1	0.91	0.02, 5.08
2. 1997-2001 0 ~1 0.00 0.00, 2.53 3. 2002-2006 2 ~2 1.21 0.15, 4.39 4. 2007-2011 2 ~2 1.18 0.14, 4.26 1992-2011 6 ~6 0.95 0.35, 2.06  Cervix Uteri Female 1. 1992-1996 1 ~0 4.56 0.12, 25.40 2. 1997-2001 1 ~0 4.07 0.10, 22.67 3. 2002-2006 0 ~0 0.00 0.00, 15.01 4. 2007-2011 2 ~0 9.35 1.13, 33.77			1992-2011	8	~3	2.29	0.99, 4.52
3. 2002-2006 2 ~2 1.21 0.15, 4.39 4. 2007-2011 2 ~2 1.18 0.14, 4.26 1992-2011 6 ~6 0.95 0.35, 2.06  Cervix Uteri Female 1. 1992-1996 1 ~0 4.56 0.12, 25.40 2. 1997-2001 1 ~0 4.07 0.10, 22.67 3. 2002-2006 0 ~0 0.00 0.00, 15.01 4. 2007-2011 2 ~0 9.35 1.13, 33.77		Male	1. 1992-1996	2	~2	1.30	0.16, 4.70
4. 2007-2011     2     ~2     1.18     0.14, 4.26       1992-2011     6     ~6     0.95     0.35, 2.06       Cervix Uteri     Female     1. 1992-1996     1     ~0     4.56     0.12, 25.40       2. 1997-2001     1     ~0     4.07     0.10, 22.67       3. 2002-2006     0     ~0     0.00     0.00, 15.01       4. 2007-2011     2     ~0     9.35     1.13, 33.77			2. 1997-2001	0	~1	0.00	0.00, 2.53
Tervix Uteri  Female  1992-2011  6			3. 2002-2006	2	~2	1.21	0.15, 4.39
Cervix Uteri     Female     1. 1992-1996     1     ~0     4.56     0.12, 25.40       2. 1997-2001     1     ~0     4.07     0.10, 22.67       3. 2002-2006     0     ~0     0.00     0.00, 15.01       4. 2007-2011     2     ~0     9.35     1.13, 33.77			4. 2007-2011	2	~2	1.18	0.14, 4.26
Cervix Uteri     Female     1. 1992-1996     1     ~0     4.56     0.12, 25.40       2. 1997-2001     1     ~0     4.07     0.10, 22.67       3. 2002-2006     0     ~0     0.00     0.00, 15.01       4. 2007-2011     2     ~0     9.35     1.13, 33.77			1992-2011	6	~6	0.95	0.35, 2.06
3. 2002-2006     0     ~0     0.00     0.00, 15.01       4. 2007-2011     2     ~0     9.35     1.13, 33.77	Cervix Uteri	Female	1. 1992-1996	1	~0	4.56	0.12, 25.40
3. 2002-2006     0     ~0     0.00     0.00, 15.01       4. 2007-2011     2     ~0     9.35     1.13, 33.77			2. 1997-2001	1	~0		0.10, 22.67
4. 2007-2011 2 ~0 9.35 1.13, 33.77			3. 2002-2006	0	~0	0.00	
			4. 2007-2011	2	~0	9.35	
			1992-2011	4	~1	4.33	



Colon	Both	1. 1992-1996	3	~2	1.61	0.33, 4.72
		2. 1997-2001	4	~2	1.94	0.53, 4.96
		3. 2002-2006	4	~2	1.63	0.44, 4.17
		4. 2007-2011	2	~3	0.75	0.09, 2.70
		1992-2011	13	~9	1.44	0.76, 2.46
	Female	1. 1992-1996	0	~1	0.00	0.00, 5.87
		2. 1997-2001	0	~1	0.00	0.00, 5.04
		3. 2002-2006	3	~1	3.46	0.71, 10.10
		4. 2007-2011	0	~1	0.00	0.00, 3.89
		1992-2011	3	~3	0.94	0.19, 2.76
	Male	1. 1992-1996	3	~1	2.44	0.50, 7.13
		2. 1997-2001	4	~1	3.00	0.82, 7.68
		3. 2002-2006	1	~2	0.63	0.02, 3.51
		4. 2007-2011	2	~2	1.16	0.14, 4.19
		1992-2011	10	~6	1.70	0.82, 3.13
Connective,	Both	1. 1992-1996	0	~0	0.00	0.00, 47.38
Subcutaneous &		2. 1997-2001	1	~0	10.60	0.27, 59.04
Other Soft Tissues		3. 2002-2006	1	~0	8.25	0.21, 45.95
		4. 2007-2011	0	~0	0.00	0.00, 24.24
		1992-2011	2	~0	4.49	0.54, 16.21
	Female	1. 1992-1996	0	~0	0.00	0.00, 103.09
		2. 1997-2001	0	~0	0.00	0.00, 97.88
		3. 2002-2006	0	~0	0.00	0.00, 80.82
		4. 2007-2011	0	~0	0.00	0.00, 63.41
		1992-2011	0	~0	0.00	0.00, 20.81
	Male	1. 1992-1996	0	~0	0.00	0.00, 87.66
		2. 1997-2001	1	~0	17.64	0.45, 98.30
		3. 2002-2006	1	~0	13.22	0.33, 73.68
		4. 2007-2011	0	~0	0.00	0.00, 39.24
		1992-2011	2	~0	7.45	0.90, 26.92
Endometrium	Female	1. 1992-1996	1	~0	2.98	0.08, 16.59
		2. 1997-2001	0	~0	0.00	0.00, 9.00
		3. 2002-2006	1	~0	2.13	0.05, 11.86
		4. 2007-2011	1	~1	1.82	0.05, 10.15
		1992-2011	3	~2	1.70	0.35, 4.97



Esophagus	Both	1. 1992-1996	1	~0	8.87	0.22, 49.43
Loophagao	Botti	2. 1997-2001	1	~0	6.83	0.17, 38.05
		3. 2002-2006	0	~0	0.00	0.00, 17.89
		4. 2007-2011	0	~0	0.00	0.00, 14.42
		1992-2011	2	~1	2.77	0.34, 10.02
	Female	1. 1992-1996	0	~0	0.00	0.00, 137.96
		2. 1997-2001	0	~0	0.00	0.00, 118.06
		3. 2002-2006	0	~0	0.00	0.00, 103.24
		4. 2007-2011	0	~0	0.00	0.00, 84.19
		1992-2011	0	~0	0.00	0.00, 26.82
	Male	1. 1992-1996	1	~0	11.63	0.29, 64.80
		2. 1997-2001	1	~0	8.68	0.22, 48.37
		3. 2002-2006	0	~0	0.00	0.00, 21.64
		4. 2007-2011	0	~0	0.00	0.00, 17.41
		1992-2011	2	~1	3.43	0.42, 12.38
Hodgkin	Both	1. 1992-1996	0	~0	0.00	0.00, 25.11
Lymphoma		2. 1997-2001	0	~0	0.00	0.00, 22.37
		3. 2002-2006	1	~0	6.50	0.16, 36.23
		4. 2007-2011	0	~0	0.00	0.00, 27.32
		1992-2011	1	~1	1.66	0.04, 9.28
	Female	1. 1992-1996	0	~0	0.00	0.00, 54.16
		2. 1997-2001	0	~0	0.00	0.00, 49.74
		3. 2002-2006	0	~0	0.00	0.00, 54.14
		4. 2007-2011	0	~0	0.00	0.00, 61.08
		1992-2011	0	~0	0.00	0.00, 13.62
	Male	1. 1992-1996	0	~0	0.00	0.00, 46.81
		2. 1997-2001	0	~0	0.00	0.00, 40.65
		3. 2002-2006	1	~0	11.68	0.30, 65.06
		4. 2007-2011	0	~0	0.00	0.00, 49.43
		1992-2011	1	~0	3.03	0.08, 16.89
Kidney	Both	1. 1992-1996	2	~0	4.43	0.54, 16.01
		2. 1997-2001	1	~0	2.09	0.05, 11.64
		3. 2002-2006	1	~1	1.75	0.04, 9.76
		4. 2007-2011	0	~1	0.00	0.00, 5.63
		1992-2011	4	~2	1.86	0.51, 4.75
	Female	1. 1992-1996	0	~0	0.00	0.00, 27.83
		2. 1997-2001	0	~0	0.00	0.00, 24.09
		3. 2002-2006	0	~0	0.00	0.00, 21.09
		4. 2007-2011	0	~0	0.00	0.00, 17.70
		1992-2011	0	~1	0.00	0.00, 5.51



Kidney		F					
Second	Kidney	Male					·
Leukemia   Both   1.1992-1996   1				_			
Leukemia   Both							
Leukemia   Both				0			0.00, 8.26
2.1997-2001   2			1992-2011	4	~1	2.69	0.73, 6.89
Second	Leukemia	Both	1. 1992-1996		~1	1.78	0.04, 9.89
A			2. 1997-2001	2	~1	3.11	0.38, 11.24
Temale			3. 2002-2006		~1	1.40	0.04, 7.78
Female			4. 2007-2011	0	~1	0.00	0.00, 4.62
2. 1997-2001			1992-2011	4	~3	1.47	0.40, 3.76
Second		Female	1. 1992-1996	0	~0	0.00	0.00, 19.34
A			2. 1997-2001	1	~0	4.55	0.12, 25.36
Male			3. 2002-2006	0	~0	0.00	0.00, 14.65
Male			4. 2007-2011	0	~0	0.00	0.00, 13.99
2. 1997-2001			1992-2011	1	~1	1.08	0.03, 6.02
Second		Male	1. 1992-1996	1	~0	2.68	0.07, 14.96
Second			2. 1997-2001	1	~0	2.36	0.06, 13.17
A. 2007-2011			3. 2002-2006	1	~0	2.15	
Liver & Intrahepatic Bile Ducts    Both   1. 1992-1996   0			4. 2007-2011	0	~1	0.00	
Intrahepatic Bile Ducts    2. 1997-2001			1992-2011	3	~2	1.67	0.34, 4.88
Ducts    3. 2002-2006	1.	I F	f				
S. 2002-2006	Liver &	Both	1. 1992-1996	0	~0	0.00	0.00, 25.14
Helanoma of Skin   Helanoma of Skin   Female   1.1992-2011   1	Intrahepatic Bile	Both					
Female 1. 1992-1996 0 ~0 0.00 0.00, 96.11 2. 1997-2001 0 ~0 0.00 0.00, 95.42 3. 2002-2006 0 ~0 0.00 0.00, 62.13 4. 2007-2011 0 ~0 0.00 0.00, 48.72 1992-2011 0 ~0 0.00 0.00, 17.39 Male 1. 1992-1996 0 ~0 0.00 0.00, 34.04 2. 1997-2001 0 ~0 0.00 0.00, 25.04 3. 2002-2006 1 ~0 5.15 0.13, 28.70 4. 2007-2011 0 ~0 0.00 0.00, 16.92 1992-2011 1 ~1 1.50 0.04, 8.34 Melanoma of Skin Both 1. 1992-1996 0 ~1 0.00 0.00, 6.77 2. 1997-2001 0 ~1 0.00 0.00, 5.66 3. 2002-2006 0 ~1 0.00 0.00, 5.30 4. 2007-2011 1 ~1 1.27 0.03, 7.07	Intrahepatic Bile	Both	2. 1997-2001	0	~0	0.00	0.00, 19.83
Male	Intrahepatic Bile	Both	2. 1997-2001 3. 2002-2006	0 1	~0 ~0	0.00 3.95	0.00, 19.83 0.10, 21.98
Male	Intrahepatic Bile	Both	2. 1997-2001 3. 2002-2006 4. 2007-2011	0 1 0	~0 ~0 ~0	0.00 3.95 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56
4. 2007-2011       0       ~0       0.00       0.00, 48.72         1992-2011       0       ~0       0.00       0.00, 17.39         Male       1. 1992-1996       0       ~0       0.00       0.00, 34.04         2. 1997-2001       0       ~0       0.00       0.00, 25.04         3. 2002-2006       1       ~0       5.15       0.13, 28.70         4. 2007-2011       0       ~0       0.00       0.00, 16.92         1992-2011       1       ~1       1.50       0.04, 8.34         Melanoma of Skin       Both       1. 1992-1996       0       ~1       0.00       0.00, 6.77         2. 1997-2001       0       ~1       0.00       0.00, 5.66         3. 2002-2006       0       ~1       0.00       0.00, 5.30         4. 2007-2011       1       ~1       1.27       0.03, 7.07	Intrahepatic Bile		2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011	0 1 0 1	~0 ~0 ~0 ~1	0.00 3.95 0.00 1.14	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33
Male         1992-2011         0         ~0         0.00         0.00, 17.39           Male         1. 1992-1996         0         ~0         0.00         0.00, 34.04           2. 1997-2001         0         ~0         0.00         0.00, 25.04           3. 2002-2006         1         ~0         5.15         0.13, 28.70           4. 2007-2011         0         ~0         0.00         0.00, 16.92           1992-2011         1         ~1         1.50         0.04, 8.34           Melanoma of Skin         Both         1. 1992-1996         0         ~1         0.00         0.00, 6.77           2. 1997-2001         0         ~1         0.00         0.00, 5.66           3. 2002-2006         0         ~1         0.00         0.00, 5.30           4. 2007-2011         1         ~1         1.27         0.03, 7.07	Intrahepatic Bile		2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996	0 1 0 1	~0 ~0 ~0 ~1 ~0	0.00 3.95 0.00 1.14 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11
Male       1. 1992-1996       0       ~0       0.00       0.00, 34.04         2. 1997-2001       0       ~0       0.00       0.00, 25.04         3. 2002-2006       1       ~0       5.15       0.13, 28.70         4. 2007-2011       0       ~0       0.00       0.00, 16.92         1992-2011       1       ~1       1.50       0.04, 8.34         Melanoma of Skin       Both       1. 1992-1996       0       ~1       0.00       0.00, 6.77         2. 1997-2001       0       ~1       0.00       0.00, 5.66         3. 2002-2006       0       ~1       0.00       0.00, 5.30         4. 2007-2011       1       ~1       1.27       0.03, 7.07	Intrahepatic Bile		2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996 2. 1997-2001	0 1 0 1 0	~0 ~0 ~0 ~1 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42
2. 1997-2001   0	Intrahepatic Bile		2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006	0 1 0 1 0 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13
3. 2002-2006   1	Intrahepatic Bile		2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011	0 1 0 1 0 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72
4. 2007-2011     0     ~0     0.00     0.00, 16.92       1992-2011     1     ~1     1.50     0.04, 8.34       Melanoma of Skin     Both     1. 1992-1996     0     ~1     0.00     0.00, 6.77       2. 1997-2001     0     ~1     0.00     0.00, 5.66       3. 2002-2006     0     ~1     0.00     0.00, 5.30       4. 2007-2011     1     ~1     1.27     0.03, 7.07	Intrahepatic Bile	Female	2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011	0 1 0 1 0 0 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39
Melanoma of Skin         Both         1.1992-2011         1         ~1         1.50         0.04, 8.34           Melanoma of Skin         Both         1.1992-1996         0         ~1         0.00         0.00, 6.77           2.1997-2001         0         ~1         0.00         0.00, 5.66           3.2002-2006         0         ~1         0.00         0.00, 5.30           4.2007-2011         1         ~1         1.27         0.03, 7.07	Intrahepatic Bile	Female	2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996	0 1 0 1 0 0 0 0 0	~0 ~0 ~1 ~1 ~0 ~0 ~0 ~0 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04
Melanoma of Skin         Both         1. 1992-1996         0         ~1         0.00         0.00, 6.77           2. 1997-2001         0         ~1         0.00         0.00, 5.66           3. 2002-2006         0         ~1         0.00         0.00, 5.30           4. 2007-2011         1         ~1         1.27         0.03, 7.07	Intrahepatic Bile	Female	2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996 2. 1997-2001	0 1 0 1 0 0 0 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04 0.00, 25.04
2. 1997-2001     0     ~1     0.00     0.00, 5.66       3. 2002-2006     0     ~1     0.00     0.00, 5.30       4. 2007-2011     1     ~1     1.27     0.03, 7.07	Intrahepatic Bile	Female	2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006	0 1 0 1 0 0 0 0 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04 0.00, 25.04 0.13, 28.70
3. 2002-2006     0     ~1     0.00     0.00, 5.30       4. 2007-2011     1     ~1     1.27     0.03, 7.07	Intrahepatic Bile	Female	2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 4. 2007-2011 4. 2007-2011	0 1 0 1 0 0 0 0 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04 0.00, 25.04 0.13, 28.70 0.00, 16.92
4. 2007-2011 1 ~1 1.27 0.03, 7.07	Intrahepatic Bile Ducts	Female Male	2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011	0 1 0 1 0 0 0 0 0 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~1	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04 0.00, 25.04 0.13, 28.70 0.00, 16.92 0.04, 8.34
	Intrahepatic Bile Ducts	Female Male	2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1992-2011 1. 1992-1996	0 1 0 1 0 0 0 0 0 0 0 0 1 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~1 ~1	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04 0.00, 25.04 0.13, 28.70 0.00, 16.92 0.04, 8.34 0.00, 6.77
1992-2011 1 ~3 0.37 0.01, 2.08	Intrahepatic Bile Ducts	Female Male	2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-1996 2. 1997-2001 1. 1992-2011 1. 1992-1996 2. 1997-2001	0 1 0 1 0 0 0 0 0 0 0 0 1 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~1 ~1 ~1	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04 0.00, 25.04 0.13, 28.70 0.00, 16.92 0.04, 8.34 0.00, 6.77 0.00, 5.66
	Intrahepatic Bile Ducts	Female Male	2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006 4. 2007-2011 1. 1992-1996 2. 1997-2001 1. 1992-2011 1. 1992-1996 2. 1997-2001 3. 2002-2006	0 1 0 1 0 0 0 0 0 0 0 0 1 0 0	~0 ~0 ~0 ~1 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~0 ~1 ~1 ~1 ~1 ~1	0.00 3.95 0.00 1.14 0.00 0.00 0.00 0.00 0.00 0.00	0.00, 19.83 0.10, 21.98 0.00, 12.56 0.03, 6.33 0.00, 96.11 0.00, 95.42 0.00, 62.13 0.00, 48.72 0.00, 17.39 0.00, 34.04 0.00, 25.04 0.13, 28.70 0.00, 16.92 0.04, 8.34 0.00, 6.77 0.00, 5.66 0.00, 5.30



Melanoma of Skin	Female	1. 1992-1996	0	0	0.00	0.00 11.70
Wiciarionia of Okin	Ciliaic	2. 1997-2001	0	~0 ~0	0.00	0.00, 14.78 0.00, 12.36
		3. 2002-2006	0	~0	0.00	0.00, 12.30
		4. 2007-2011	1	~0	2.99	0.08, 16.67
		1992-2011	1	~1	0.84	0.02, 4.70
	Male	1. 1992-1996	0	~0	0.00	0.02, 4.70
	Iviaio	2. 1997-2001	0	~0	0.00	0.00, 12.49
		3. 2002-2006	0	~0	0.00	0.00, 10.44
		4. 2007-2011	0	~0	0.00	0.00, 9.43
		1992-2011	0	~1	0.00	0.00, 0.12
Multiple Myeloma	Both		1			
& Plasmacytoma	Dour	1. 1992-1996	0	~0	5.54	0.14, 30.86
a i idomacytoma		2. 1997-2001		~0	0.00	0.00, 19.52
		3. 2002-2006	0	~0	0.00	0.00, 14.12
		4. 2007-2011	1	~0	3.49	0.09, 19.45
	F l .	1992-2011	2	~1	2.18	0.26, 7.88
	Female	1. 1992-1996	0	~0	0.00	0.00, 57.30
		2. 1997-2001	0	~0	0.00	0.00, 55.07
		3. 2002-2006	0	~0	0.00	0.00, 39.83
		4. 2007-2011	1	~0	10.41	0.26, 57.98
		1992-2011	1	~0	3.12	0.08, 17.41
	Male	1. 1992-1996	1	~0	8.61	0.22, 47.96
		2. 1997-2001	0	~0	0.00	0.00, 30.24
		3. 2002-2006	0	~0	0.00	0.00, 21.88
		4. 2007-2011	0	~0	0.00	0.00, 19.38
		1992-2011	1	~1	1.67	0.04, 9.33
Nonhodgkin	Both	1. 1992-1996	2	~1	3.49	0.42, 12.62
Lymphoma		2. 1997-2001	1	~1	1.47	0.04, 8.21
		3. 2002-2006	2	~1	2.37	0.29, 8.56
		4. 2007-2011	1	~1	1.05	0.03, 5.86
		1992-2011	6	~3	1.97	0.72, 4.29
	Female	1. 1992-1996	2	~0	9.60	1.16, 34.68
		2. 1997-2001	0	~0	0.00	0.00, 14.39
		3. 2002-2006	1	~0	3.16	0.08, 17.58
		4. 2007-2011	0	~0	0.00	0.00, 10.32
		1992-2011	3	~1	2.63	0.54, 7.70
	Male	1. 1992-1996	0	~0	0.00	0.00, 10.14
		2. 1997-2001	1	~0	2.37	0.06, 13.20
		3. 2002-2006	1	~1	1.90	0.05, 10.57
		4. 2007-2011	1	~1	1.69	0.04, 9.40
		1992-2011	3	~2	1.57	0.32, 4.60



Prostate Gland	Male	1. 1992-1996	2	~3	0.72	0.09, 2.59
		2. 1997-2001	3	~3	0.90	0.18, 2.62
		3. 2002-2006	1	~4	0.26	0.01, 1.42
		4. 2007-2011	6	~4	1.58	0.58, 3.45
		1992-2011	12	~14	0.87	0.45, 1.51
Unknown Primary	Both	1. 1992-1996	0	~1	0.00	0.00, 6.95
		2. 1997-2001	0	~0	0.00	0.00, 7.73
		3. 2002-2006	2	~0	4.57	0.55, 16.52
		4. 2007-2011	0	~0	0.00	0.00, 10.87
		1992-2011	2	~2	1.12	0.14, 4.05
	Female	1. 1992-1996	0	~0	0.00	0.00, 17.33
		2. 1997-2001	0	~0	0.00	0.00, 17.09
		3. 2002-2006	0	~0	0.00	0.00, 19.79
		4. 2007-2011	0	~0	0.00	0.00, 25.98
		1992-2011	0	~1	0.00	0.00, 4.87
	Male	1. 1992-1996	0	~0	0.00	0.00, 11.60
		2. 1997-2001	0	~0	0.00	0.00, 14.11
		3. 2002-2006	2	~0	7.97	0.96, 28.78
		4. 2007-2011	0	~0	0.00	0.00, 18.70
		1992-2011	2	~1	1.95	0.24, 7.03

Data Source: Alberta Cancer Registry. Prepared by Surveillance & Reporting, Cancer Care, Alberta Health Services. Oct 2013

<sup>\*</sup> All cancer sites excluding non-melanoma skin cancer

<sup>†</sup> Fort Chipewyan area as defined by postal code T0P 1B0

<sup>‡</sup> Adjusted by age, sex and year

<sup>§</sup> Indirect Standardized Incidence Ratio (ISIR) and 95% Confidence Interval (CI)

<sup>||</sup> No breast cancer cases diagnosed in males in the Fort Chipewyan area between 1992 and 2011