

## 1 Supplementary Material

Supplemental Table 4. Quality assessment of included studies					
Author (Year)	Appropriate data source/outcome measure	Appropriate time frame studied?	Appropriate statistical tests used?	Study design suitability <sup>1</sup>	Overall quality score <sup>2</sup>
Sproule (1988)	<ul style="list-style-type: none"> <li>Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada; Canadian Center for Justice Statistics</li> </ul> </li> <li>Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian firearm homicide rates</li> </ul> </li> </ul>	No: 1972-1976 (pre-Bill C-51), 1977-1982 (Bill C-51 provisions came into effect in 1978 and 1979)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1
Mundt (1990)	<ul style="list-style-type: none"> <li>Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada; Canadian Center for Justice Statistics; US Justice Dept; National Center for Health Statistics</li> </ul> </li> <li>Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian and US firearm homicide, suicide, accidental death rates</li> </ul> </li> </ul>	Yes: 1971-1988 (Bill C-51 provisions came into effect in 1978 and 1979)	No: Visual inspection was performed without statistical tests	Moderate	1
Rich (1990)	<ul style="list-style-type: none"> <li>Data sources appropriate               <ul style="list-style-type: none"> <li>- Office of the Chief Coroner for Ontario</li> </ul> </li> <li>Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian firearm homicide, suicide, accidental death rates</li> </ul> </li> </ul>	Yes: 1973-1977 (pre-Bill C-51), 1979-1983 (post-Bill C-51)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1
Mauser (1992)	<ul style="list-style-type: none"> <li>Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada; Canadian Center for Justice Statistics; Employment and Immigration Canada; Canadian Dept of Indian Affairs and Northern Affairs</li> </ul> </li> <li>Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian firearm homicide rates</li> </ul> </li> </ul>	Yes: 1968-1977 (pre-Bill C-51), 1978-1988 (post-Bill C-51)	Yes: Pooled cross-section time series model	Moderate	3
Leenaars (1993,1994 1996,1997b 2001,2003)	<ul style="list-style-type: none"> <li>Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian firearm homicide and suicide rates</li> </ul> </li> </ul>	Yes: 1969-1976 (pre-Bill C-51), 1978-1985 (post-Bill C-51)	Yes: Interrupted time-series, multiple regression analysis	Moderate	3
Carrington (1994a)	<ul style="list-style-type: none"> <li>Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Ontario firearm suicide rates</li> </ul> </li> </ul>	Yes: 1965-1977 (pre-Bill C-51), 1979-1989 (post-Bill C-51)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1

Carrington (1994b)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Canadian firearm suicide rates</li> </ul> </li> </ul>	Yes: 1965-1977 (pre-Bill C-51), 1979-1989 (post-Bill C-51)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1
Leenaars (1997a)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Canadian firearm accidental death rates</li> </ul> </li> </ul>	Yes: 1969-1976 (pre-Bill C-51), 1978-1985 (post-Bill C-51)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1
Bridges (2004)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Canadian firearm homicide and suicide rates</li> </ul> </li> </ul>	Yes: 1984-1990 (pre Bill C-17), 1991-1998 (post-Bill C-17)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1
Caron (2004)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Quebec Coroner's Office</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Abitibi-Témiscamingue (Northern Quebec) firearm suicide rates</li> </ul> </li> </ul>	Yes: 1986-1991 (pre-Bill C-17), 1992-1996 (post-Bill C-17)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1
Cheung (2005)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Canadian firearm suicide rates in adolescents 15-19 years</li> </ul> </li> </ul>	Yes: 1979-1990 (pre-Bill C-17), 1991-1999 (post-Bill C-17)	No: Violated test postulates, weak statistical power, failed to measure immediate or gradual effects of the law, lacked 3 <sup>rd</sup> party variables	Moderate	1
Caron (2008)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Quebec Coroner's Office;</li> <li>Quebec Statistics Institute</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Quebec firearm suicide rates</li> </ul> </li> </ul>	Yes: 1987-1991 (pre Bill C-17), 1992-2001 (post-Bill C-17)	Yes: Linear regression, interrupted time series, Pearson correlation coefficient analyses, multivariate analysis	Moderate	3
Gagne (2010)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Quebec Statistics Institute</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Quebec male firearm suicide rates</li> </ul> </li> </ul>	Yes: 1981-2006 (Bill C-17 implemented in 1992)	Yes: Joinpoint analysis, Poisson regression analysis	Moderate	3
Blais (2011)	<ul style="list-style-type: none"> <li>• Data sources appropriate <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>• Outcome measure appropriate <ul style="list-style-type: none"> <li>- Canadian firearm homicide rates</li> </ul> </li> </ul>	Yes: 1974-1977 (pre-Bill C-51), 1978-2004 (post-Bill C-51); 1974-1991 (pre-	Yes: Multiple time series analysis	Moderate	3

		Bill C-17), 1992-2004 (post-Bill C-17); 1974-1997 (pre-Bill C-68), 1998-2004 (post-Bill C-68)			
Langmann (2012)	<ul style="list-style-type: none"> <li>• Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>• Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian firearm homicide rates</li> </ul> </li> </ul>	Yes: 1974-2008 (Bill C-51 implemented in 1978, Bill C-17 implemented in 1992, Bill C-68 implemented in stages 1996-2003)	Yes: Multivariate regression, Interrupted time series, Poisson regression, ARIMA, Joinpoint analysis	Moderate	3
Linteau (2013)	<ul style="list-style-type: none"> <li>• Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada; Canadian Minister of Indian Affairs Office; Statistics Institute of Quebec</li> </ul> </li> <li>• Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Quebec firearm homicide rates</li> </ul> </li> </ul>	Yes: 1974-1997 (pre-Bill C-68), 1998-2006 (post-Bill C-68)	Yes: Extreme bounds analysis	Moderate	3
McPhedran (2013)	<ul style="list-style-type: none"> <li>• Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada; Dept of Justice</li> </ul> </li> <li>• Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian firearm homicide rates</li> </ul> </li> </ul>	Yes: 1974-1995 (pre-Bill C-68), 1996-2009 (post-Bill C-68)	Yes: ARIMA, Zivot–Andrews structural breakpoint test	Moderate	3
Langmann (2020)	<ul style="list-style-type: none"> <li>• Data sources appropriate               <ul style="list-style-type: none"> <li>- Statistics Canada</li> </ul> </li> <li>• Outcome measure appropriate               <ul style="list-style-type: none"> <li>- Canadian firearm homicide &amp; suicide rates</li> </ul> </li> </ul>	Yes: 1981-2016 (Bill C-17 passed in 1991; Bill C-68 was implemented in stages 1996-2003)	Yes: Difference-in-difference analysis, negative binomial regression	Moderate	3

<sup>1</sup>Longitudinal prospective studies with a concurrent comparison group and multiple pre/post-intervention measurements were classified as having “greatest” design suitability; longitudinal studies without a concurrent comparison group but with multiple pre/post-intervention measurements were classified as “moderate”, and longitudinal studies without a concurrent comparison group and with only single pre/post-intervention measurements or with only post-intervention measurements were classified as having “least” design suitability.

<sup>2</sup>If all 4 metrics were achieved, a score of 3 (good quality) was assigned. If 2 to 3 metrics, including appropriate statistical testing, were achieved, a score of 2 (fair quality) was assigned. If 1 metric or 2 to 3 metrics without appropriate statistical testing were achieved, a score of 1 (poor quality) was assigned.