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2024 Report on Suicide Mortality in the Canadian Armed Forces (1995 to 2023)

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Directorate of Mental Health

Surgeon General Report

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2024 Report on Suicide Mortality in the Canadian Armed Forces (1995 to 2023)

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Abstract

Introduction: Each death from suicide is tragic. Suicide prevention is an important public health concern and is a top priority for the Canadian Armed Forces (CAF). In order to better understand suicide in the CAF and refine ongoing suicide prevention efforts, the Canadian Forces Health Services annually examine suicide rates and the relationship between suicide, deployment and other potential suicide risk factors. This analysis, conducted by the Directorate of Mental Health (DMH), is an update covering the period from 1995 to 2023.

Methods: This report assesses suicide data for Regular Force personnel over 1995 to 2023. It provides an interpretation of several statistics, including unadjusted suicide rates observed among various characteristics over time and Standardized Mortality Ratios (SMRs) that compare Regular Force suicide rates with those of the Canadian population. It also examines data from Medical Professional Technical Suicide Reviews (MPTSR) and summarizes the prevalence of mental health-related factors and work or life stressors that are known to be suicide death risk factors.

Results: In 2023, there were 17 suicide deaths among serving Regular Force personnel (15 male and 2 female) and 4 among Reservists. The Regular Force personnel suicide rate was 27.0 (95%CI: 15.7, 43.1) per 100,000 person years in 2023, an increase relative to 20.3 (95%CI: 10.8, 34.7) in 2022 and 23.1 (95%CI: 12.9, 38.1) in 2021. Among both Regular Force males and females, the unadjusted suicide rate tended to be higher in personnel younger than 45 years, males, unmarried/non-common law (particularly separated, divorced or widowed marital status), non-officer ranks (particularly JNCM ranks) and the Army combat arms occupation, with a generally consistent pattern across 2010 to 2023. In contrast, the environmental command with the highest suicide rate, and whether those with a deployment history had a higher suicide rate, varied a little across time. In 2023, suicide rates were highest among those in the other, non-specific, environmental command and among those with a deployment history. Moreover, the five-year annual suicide rate averages for the different commands indicated no consistent patterns; the command with the highest, or lowest, suicide rate changed from period-to-period, and the differences were not statistically significant.

Over 1995 to 2023, Regular Force suicide rates fluctuated among Regular Force personnel but there has been no statistically significant change in the five-year rate. The five-year age and sex Standardized Mortality Ratios (SMRs) computed over 1995-2022 suggest that from 2010 onwards, there has been a tendency for rates to be higher among Regular Force personnel relative to Canadian civilians, but these increases were not statistically significant. However, among the single year SMRs calculated since 2010, the SMR in 2011 for males and 2012 for females were both statistically significant, indicating a higher suicide rate relative to civilians.

Among the Regular Force suicides in 2023, there was a high prevalence of mental disorders (65% had at least one) and work or life stressors (94% had at least one). The most prominent work or life stressors were physical health problems (65%), a failing spousal/intimate relationship (59%) and job, supervisor or work performance problems (59%). The most common method of suicide in 2023 was hanging (59%), followed by non-military firearm (17%).

Conclusions: There has been minimal change in suicide death patterns during 2023 relative to recent prior years. Nonetheless, small numbers do limit the ability, or power, of statistical assessments to detect differences. The observations continue to support a multifactorial causal pathway for suicide, rather than a direct link with a single risk factor. CAF suicide prevention efforts should adapt as needed.

Keywords: Age-adjusted rate; Canadian Armed Forces; Canadian population; deployment; rate ratio; rates; standardized mortality ratio; suicide.

Résumé

Introduction : Chaque décès par suicide constitue une tragédie. La prévention du suicide est un aspect important de la santé publique et une des grandes priorités des Forces armées canadiennes (FAC). Afin de mieux comprendre le suicide au sein des FAC et de parfaire les efforts continus en matière de prévention, les Services de santé des Forces canadiennes effectuent chaque année des analyses pour examiner les taux de suicide et la relation entre le suicide, le déploiement et d'autres facteurs de risque de suicide. La présente analyse, réalisée par le Directeur – Santé mentale (DSM), représente une mise à jour pour la période s'échelonnant de 1995 à 2023.

Méthodes : Le présent rapport évalue les données sur le suicide chez les membres de la Force régulière de 1995 à 2023. Il présente une interprétation de plusieurs statistiques, y compris les taux non ajustés de suicide observés selon diverses caractéristiques au fil du temps et les ratios standardisés de mortalité (RSM) qui comparent les taux de suicide de la Force régulière à ceux de la population canadienne. Il examine également les données tirées des examens techniques des suicides par des professionnels de la santé (ETSPS) et résume la prévalence des facteurs liés à la santé mentale et des facteurs de stress au travail ou dans la vie qui sont connus pour être des facteurs de risque de décès par suicide.

Résultats : En 2023, il y a eu 17 décès par suicide chez les membres actifs de la Force régulière (15 hommes et 2 femmes) et 4 chez les réservistes. Le taux de suicide des membres de la Force régulière était de 27,0 (IC à 95 % : 15,7, 43,1) pour 100 000 personnes-années en 2023, une augmentation par rapport à 20,3 (IC à 95 % : 10,8, 34,7) en 2022 et à 23,1 (IC à 95 % : 12,9, 38,1) en 2021. Tant chez les hommes que chez les femmes de la Force régulière, le taux de suicide non ajusté avait tendance à être plus élevé chez les membres du personnel de moins de 45 ans, les hommes, les personnes non mariées ou en union libre (en particulier celles dont l'état matrimonial est séparé, divorcé ou veuf), les grades de non-officiers (en particulier les militaires du rang [subalternes] [MR sub]) et le groupe professionnel des armes de combat de l'Armée de terre, avec une tendance généralement constante de 2010 à 2023. En revanche, le commandement d'armée avec le taux de suicide le plus élevé, et si ceux qui avaient des antécédents de déploiement avaient un taux de suicide plus élevé, variait un peu au fil du temps. En 2023, les taux de suicide étaient les plus élevés parmi ceux des autres commandements d'armée non spécifiques et parmi ceux qui avaient des antécédents de déploiement. De plus, les moyennes annuelles du taux de suicide sur cinq ans pour les différents commandements n'ont indiqué aucune tendance cohérente; le commandement avec le taux de suicide le plus élevé, ou le plus faible, a changé d'une période à l'autre, et les différences n'étaient pas statistiquement significatives.

De 1995 à 2023, les taux de suicide au sein de la Force régulière ont fluctué entre les membres de la Force régulière, mais il n'y a pas eu de changement statistiquement significatif dans le taux sur cinq ans. Les RSM sur cinq ans selon l'âge et le sexe calculés sur la période 1995-2022 suggèrent qu'à partir de 2010, les taux ont eu tendance à être plus élevés chez les membres de la Force régulière que chez les civils canadiens, mais ces augmentations n'étaient pas statistiquement significatives. Toutefois, parmi les RSM d'une seule année calculés depuis 2010, celui en 2011 pour les hommes et en 2012 pour les femmes était statistiquement significatif, ce qui indique un taux de suicide plus élevé que celui des civils.

Parmi les suicides au sein de la Force régulière en 2023, il y avait une prévalence élevée de troubles mentaux (65 % en présentaient au moins un) et de facteurs de stress au travail ou dans la vie (94 % en présentaient au moins un). Les facteurs de stress les plus importants liés au travail ou à la vie privée étaient les problèmes de santé physique (65 %), l'échec de relations conjugales/intimes (59 %) et les problèmes liés à l'emploi, au superviseur ou au rendement au travail (59 %). La méthode de suicide la plus courante en 2023 était la pendaison (59 %), suivie des armes à feu non militaires (17 %).

Conclusions : Il y a eu un changement minime dans les tendances en matière de décès par suicide en 2023 par rapport aux dernières années. Toutefois, la faible quantité de données limite la capacité, ou le pouvoir, des évaluations statistiques de relever les différences. Les observations continuent d'appuyer la théorie d'un enchaînement de causalité multifactoriel plutôt qu'un lien direct entre des facteurs de risque individuels et le suicide. Les efforts de prévention du suicide au sein des FAC devraient s'adapter au besoin.

Mots clés : déploiement; Forces armées canadiennes; population canadienne; ratio de taux; ratio standardisé de mortalité; suicide; taux; taux ajusté selon l'âge.

Executive Summary

Serving Personnel – 2023

Suicide death numbers	Suicide rate per 100,000 personnel
• **21 service members died by suicide:**	
➢ 17 Regular Force personnel	➢ 27.0
❖ 5 Army, 2 Air Force, 2 Navy, 8 Other[1]	❖ 23.4 Army, 15.4 Air, 24.4 Navy, 39.0 Other
❖ 15 Regular Force males	❖ 28.3
❖ 2 Regular Force females	❖ 19.8
➢ 4 Primary Reserve Force males (Class A)	➢ -
➢ 0 Primary Reserve Force females	➢ -

Key Observations:

Overall – Serving Regular Force Members:

- The 2023 suicide rate (27.0) among Regular Force personnel was higher than in 2022 (20.3) and 2021 (23.1), but it was not a statistically significant increase.
- Since 2010, suicide rates were consistently highest among younger (<45 years), male, non-officer rank, separated/divorced/widowed (and to a lesser degree, single) and Army combat arms occupation personnel. However, only some of these differences were statistically significant.

Mental Health and Life Stressors – 2023:

- 59% prior suicidal ideation and/or attempts
- 65% diagnosed mental disorders
- 59% relationship problems
- 59% workplace issues
- 29% legal or disciplinary issues
- 18% financial issues

Patterns over Time – 1995 to 2023:

- Annual suicide rates fluctuated over time among Regular Force personnel but there has been no statistically significant change in the five-year suicide rate.
- Compared to the civilian population, suicide in the Regular Force tended to be higher since 2010 but was generally not statistically significant. The two exceptions were in 2011 for males and 2012 for females.
- Five-year average suicide rates tended to be higher among those with a deployment history, but differences were not statistically significant.

Environmental Command – 2002 to 2023:

- The annual suicide rate pattern over time varied among the Regular Force commands.
- Five-year annual suicide rate averages indicated no consistency, as the command with the highest, or lowest, suicide rate changed from period-to-period, and differences were not statistically significant.

What This Tells Us:

There has been minimal change to suicide death patterns for 2023, but small numbers do limit the statistical assessments' ability to detect differences. The observations continue to support a multifactorial causal pathway for suicide, rather than a direct link with a single risk factor. CAF suicide prevention efforts should adapt as needed.

[1]The 'Other' commands include: Military Personnel Command (5), Canadian Joint Operations Command (1), Canadian Special Operations Forces Command (1) and Vice Chief of Defence Staff (1).

Sommaire

Personnel en service – 2023

Nombre de décès par suicide

- **21 militaires sont morts par suicide:**
  - 17 membres de la Force régulière
    - 5 Armée de terre, 2 Force aérienne, 2 Marine, 8 Autre[2]
    - 15 hommes de la Force régulière
    - 2 femmes de la Force régulière
  - 4 hommes de la Première réserve (service de classe A)
  - 0 femme de la Première réserve

Taux de suicide pour 100 000 militaires

- 27,0
  - 23,4 Armée de terre, 15,4 Force aérienne, 24,4 Marine, 39,0 Autre
  - 28,3
  - 19,8
- -
- -

Principales observations :

Dans l'ensemble – Membres de la Force régulière en service:

- Le taux de suicide en 2023 (27,0) parmi les membres de la Force régulière était plus élevé qu'en 2022 (20,3) et en 2021 (23,1), mais il ne s'agissait pas d'une augmentation statistiquement significative.
- Depuis 2010, les taux de suicide étaient constamment les plus élevés chez les jeunes (<45 ans), les hommes, les non-officiers, les personnes séparées/ divorcées/ veuves (et, dans une moindre mesure, célibataires) et les membres du groupe professionnel des armes de combat. Toutefois, seules quelques-unes de ces différences étaient statistiquement significatives.

Facteurs de stress liés à la santé mentale et à la vie - 2023:

- 59 % d'idées suicidaires antérieures ou de tentatives de suicide antérieures
- 65 % de troubles mentaux diagnostiqués
- 59 % de problèmes relationnels
- 59 % de problèmes en milieu de travail
- 29 % de problèmes juridiques ou disciplinaires
- 18 % de problèmes financiers

Modèles au fil du temps – 1995 à 2023 :

- Les taux annuels de suicide ont fluctué au fil du temps parmi les membres de la Force régulière, mais il n'y a pas eu de changement statistiquement significatif dans le taux de suicide sur cinq ans.
- Comparativement à la population civile, le nombre de suicides au sein de la Force régulière a tendance à être plus élevé depuis 2010, mais il n'était généralement pas statistiquement significatif. Les deux exceptions étaient en 2011 pour les hommes et en 2012 pour les femmes.
- Les taux de suicide moyens sur cinq ans avaient tendance à être plus élevés chez les personnes ayant des antécédents de déploiement, mais les différences n'étaient pas statistiquement significatives.

Commandement d'armée – 2002 à 2023 :

- La tendance des taux de suicide annuels au fil du temps variait d'un commandement à l'autre de la Force régulière.
- Les moyennes annuelles du taux de suicide sur cinq ans n'ont indiqué aucune cohérence, car le commandement avec le taux de suicide le plus élevé, ou le plus faible, a changé d'une période à l'autre, et

[2] Les 'autre' commandes incluent : Commandement du personnel militaire (5), Commandement des opérations interarmées du Canada (1), Commandement des Forces d'opérations spéciales du Canada (1) et Vice-chef d'état-major de la Défense (1).

les différences n'étaient pas statistiquement significatives.

Ce que cela signifie :

Il y a eu un changement minime dans les tendances en matière de décès par suicide en 2023, mais la faible quantité de données limite la capacité des évaluations statistiques de relever les différences. Les observations continuent d'appuyer la théorie d'un enchaînement de causalité multifactoriel plutôt qu'un lien direct entre des facteurs de risque individuels et le suicide. Les efforts de prévention du suicide au sein des FAC devraient s'adapter au besoin.


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2024 Report on Suicide Mortality in the Canadian Armed Forces (1995 to 2023)

1. Introduction

Each death from suicide can have a tragic impact on families, friends and colleagues. Suicide prevention is an important public health concern in Canada and is a top priority for the Canadian Armed Forces (CAF). The CAF Suicide Prevention Action Plan reflects the CAF's commitment to ensuring that everything that can be done is done to mitigate the risk of suicide. The investigation and analysis of deaths from suicide by CAF members provides valuable information that can assist in guiding and refining ongoing suicide prevention efforts. This annual report is one method used to ensure that clinical and prevention programmes are optimised.

There has been concern since the early 1990s about the rate of suicide in the CAF and its possible relationship to deployment. In response to these concerns, the CAF began a suicide mortality surveillance program to determine the rate of suicide among CAF personnel in comparison to the Canadian general population (CGP), as well as the rate of suicide in those personnel with a history of deployment compared to those without such a history.

Historically the reports have focused on the surveillance and epidemiology of suicide within the CAF. Since 2015, the report has expanded its scope to describe additional information related to suicide in the CAF including an assessment of the variation of suicide rates by environmental command. This report also provides information on the known underlying risk factors that may have contributed to the Regular Force suicides that took place in 2023, based on an assessment of the Medical Professional Technical Suicide Reviews (MPTSRs).

This report includes an analysis of both Regular Force males and Regular Force females who have died by suicide. MPTSRs are completed for all CAF deaths from suicide, including Reserve members; however, data from those investigations among Reserve members as well as any available data on suicide attempts are not included in this analysis for the following reasons:

1) Reserve Force data has some issues associated with completeness, in addition to concerns with possible identity and attribute disclosure.[3] Since many Reserve Force members receive their health care in the provincial health care system, Reserve member reporting and their available records may be incomplete.

[3] Statistics Canada defines *identity disclosure* as: "identifying an individual from a table, typically from small cell showing 1 or 2 persons with a characteristic. If no other information is released it is not necessarily a confidentiality breach but the perception of a breach is there. This translates into a "small cell" problem, where, for the purpose of vital statistics, "small" is defined as frequencies representing fewer than 5 births, deaths or stillbirths. "

Attribute disclosure is defined as: "disclosing attributes of individuals, even if they are not specifically identified. For example, a table row where all units share the same attribute because they are found in a single column. This translates into "zero cell" and "full cell" problems. Not all zero cells are problematic. Full cells, which occur when only one cell in a row or column is non-zero, are more likely to be."

Taken from: **Statistics Canada. Disclosure control strategy for Canadian Vital Statistics Birth and Death Databases. Ministry of Industry: Ottawa, 2016[1].**

2) Data on suicide attempts are often incomplete, due to differences in its definition and inconsistent reporting by members, and in keeping with other occupational health studies, this current report evaluates only deaths from suicide, not attempts. Additionally, the data used for this analysis include only those who have died by suicide while active in the Regular Forces, and do not include those who have died by suicide after retirement from the military. For more information on Veterans see the 2021 Veteran Suicide Mortality Study [2].

2. Methods

See Appendix 1

3. Results: Key Data and Observations

3.1 Epidemiology of Suicide in Regular Force Personnel

3.1.1 Rate Comparison Overview

In 2023, there were 17 suicide deaths among serving Regular Force personnel and 4 among Primary Reserve Force personnel (all were male and Class A Reservists). The suicide rate among Regular Force males and females was 27.0 (95%CI: 15.7, 43.1) per 100,000 person years in 2023, an increase relative to 20.3 (95%CI: 10.8, 34.7) in 2022 and 23.1 (95%CI: 12.9, 38.1) in 2021. These differences were not statistically significant, meaning that the overall population suicide risk was similar for the three years.

Table 1 provides a summarization of the unadjusted suicide rates among serving Regular Force personnel by various military and demographic characteristics over 2010 to 2023. This summarization is similarly provided separately for Regular Force males and females in Tables A1 and A2 of Appendix 2. Among Regular Force males and females, the unadjusted suicide rate tended to be higher in personnel who were younger than 45 years, males, separated, divorced or widowed and to a lesser degree, single marital status categories, non-officer ranks (particularly JNCM ranks) and the Army combat arms occupation, with a generally consistent pattern across 2010 to 2023; however, only some of these differences were statistically significant (see Table 1). In contrast, the environmental command with the highest suicide rate, and whether those with a deployment history had a higher suicide rate, varied a little across time but these differences were predominantly not statistically significant. However, the five-year average annual suicide rates computed over 2010 to 2023 indicated that during 2010-2014, when the rate was highest among the Army command and lowest among the Air command, there was a statistically significant difference in the suicide rates but only between the Army and Air commands. There were no statistically significant differences among commands or with deployment history for 2015-2019, 2020-2023 or other assessed periods. In 2023, Regular Force suicide rates were highest among those in the other, non-specific, environmental command and among those with a deployment history.

Table 1: Rate of Suicide by various Regular Force Characteristics.

	2010-2014	2015-2019	2020-2023	2023	
	Rate per 10^5 (95% CI)	**Rate per 10^5 (95% CI)**	**Rate per 105 (95% CI)**	**# (%)**	**Rate per 10^5 (95% CI)**
Age					
15-29	26.5 (17.9, 37.9)	24.9 (16.6, 36.1)	22.4 (13.5, 34.9)	5 (29.4%)	24.8 (8.0, 57.7)
30-44	24.1 (16.8, 33.5)	25.3 (18.0, 34.6)	25.5 (17.5, 35.9)	10 (58.8%)	31.4 (15.1, 57.8)
45-59	15.7 (7.5, 28.8)	9.4 (3.5, 20.5)	15.4 (6.2, 31.7)	2 (11.8%)	18.1 (2.2, 65.4)
Mean age (95% CI)	33.0 (31.0, 34.9)	33.3 (31.3, 35.4)	34.1 (32.0, 36.2)		34.8 (31.2, 38.3)
Median age	31	34	34		34
Sex					
Male	24.5 (19.2, 31.3)	24.5 (19.2, 31.2)	24.3 (18.2, 31.9)	15 (88.2%)	28.3 (15.9, 46.7)
Female	15.5 (6.2, 32.0)	8.2 (2.2, 20.9)	14.5 (5.3, 31.6)	2 (11.8%)	19.8 (2.4, 71.3)
Marital status					
Married/CL	**16.0 (10.9, 22.7)**	16.1 (11.0, 22.9)	**15.2 (9.5, 22.9)**	4 (23.5%)	11.5 (3.1, 29.4)
Single	32.3 (22.4, 45.1)	27.7 (19.1, 39.0)	28.7 (19.2, 41.3)	11 (64.7%)	44.0 (22.0, 78.8)
Separated/ Divorced/ Widowed	**51.0 (24.5, 93.3)**	48.1 (22.0, 91.4)	**59.7 (25.7, 117.7)**	2 (11.8%)	64.6 (7.8, 233.2)
Rank					
JNCM	30.6 (23.0, 40.1)	27.0 (19.9, 35.9)	**27.0 (19.0, 37.2)**	10 (58.8%)	30.7 (14.7, 56.5)
SNCM	14.6 (7.3, 26.1)	19.3 (10.8, 31.9)	28.4 (16.6, 45.5)	4 (23.5%)	27.3 (7.4, 69.8)
Officer	14.3 (6.8, 26.2)	13.4 (6.4, 24.6)	**7.9 (2.6, 18.5)**	3 (17.6%)	19.0 (3.9, 55.4)
Command					
Army	**31.5 (22.3, 43.3)**	18.7 (11.7, 28.3)	22.2 (13.5, 34.1)	5 (29.4%)	23.4 (7.6, 54.4)
Air	**8.9 (3.3, 19.3)**	30.7 (19.0, 47.0)	16.8 (7.7, 31.9)	2 (11.8%)	15.4 (1.9, 55.7)
Navy	19.7 (8.5, 38.8)	9.6 (2.6, 24.6)	23.8 (10.3, 46.9)	2 (11.8%)	24.4 (2.9, 88.0)
Other	24.6 (15.6, 36.9)	25.3 (16.5, 37.2)	26.7 (16.7, 40.3)	8 (47.1%)	39.0 (16.8, 76.9)
Army combat arms					
Yes	**45.1 (31.2, 63.0)**	34.5 (22.6, 50.8)	24.3 (13.3, 40.8)	5 (29.4%)	36.3 (11.8, 84.5)
No	**16.6 (11.9, 22.5)**	18.4 (13.5, 24.6)	22.3 (16.2, 29.8)	12 (70.6%)	24.3 (12.6, 42.6)
History of deployment					
Yes	24.7 (18.0, 33.2)	19.6 (13.5, 27.5)	25.5 (17.5, 35.8)	10 (58.8%)	31.6 (15.2, 58.1)
No	21.5 (14.6, 30.5)	24.8 (17.7, 33.7)	20.0 (13.0, 29.3)	7 (41.2%)	22.3 (8.9, 45.9)

Notes: Bold formatting on rates indicate a statistically significant difference (i.e., confidence intervals that do not overlap).

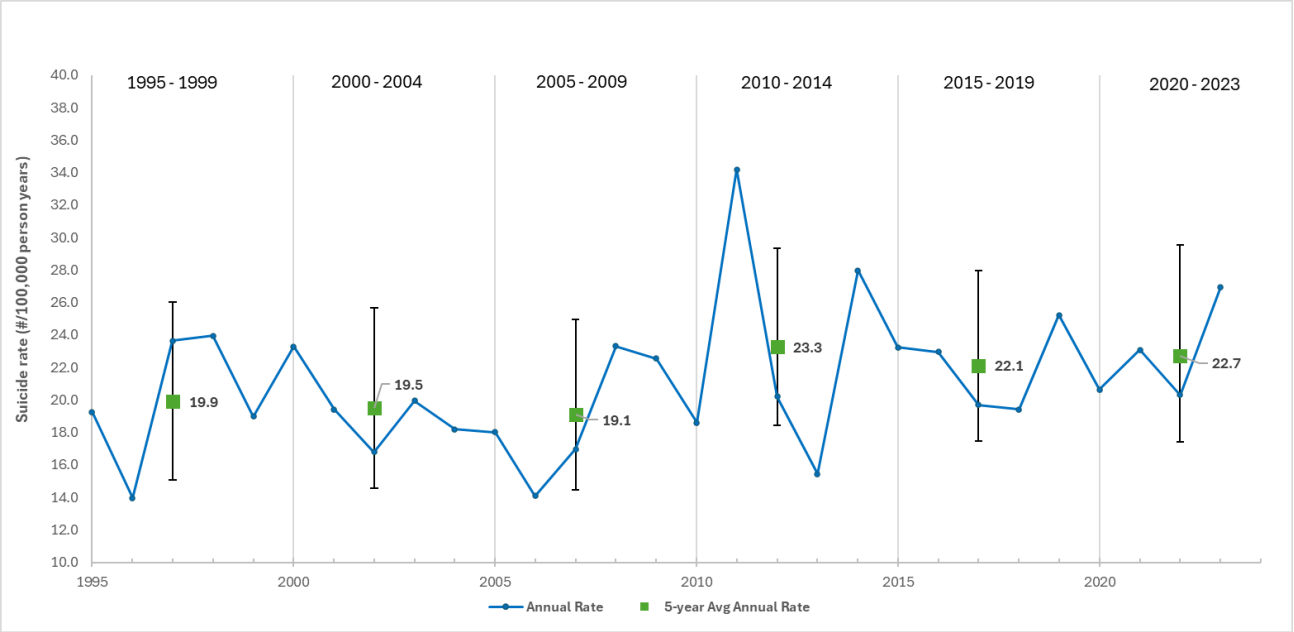
3.1.2 Temporal Patterns

Annual Rates:

The Regular Force personnel suicide death rates over 1995 to 2023 are presented in Figure 1 and this data is also separately plotted for males and females in Figures A1 and A2 of Appendix 2. Additionally, annual and five-year age and sex standardized mortality ratios (SMRs) that compare suicide rates among Regular Force personnel to their Canadian civilian counterparts is presented in Figure 2 for 1995 to 2022, and similar data are provided separately for males and females in Figures A3 and A4 of Appendix 2.

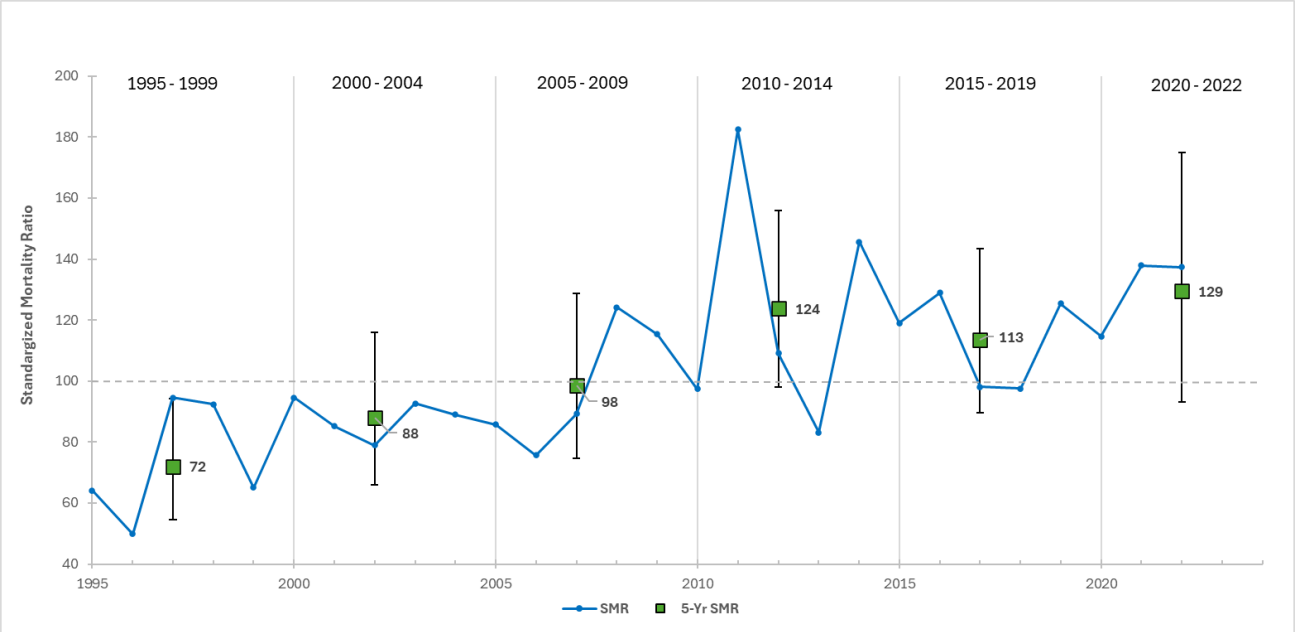
Key Observations:

- Differences among the consecutive five-year average annual suicide rates over 1995 to 2023 for Regular Force personnel were not statistically significant.
- Among Regular Force personnel, the five-year SMRs computed over 1995-2022 were below 100% prior to 2010, suggesting a lower rate relative to civilians, but from 2010 onwards they were above 100%, suggesting a higher rate relative to civilians. However, while the SMR for 1995-1999 was the only five-year SMR that was statistically significant, when looking at single year SMRs since 2010 the SMR for 2011 was elevated and statistically significant (2011 SMR Regular Force personnel: 182% [95%CI: 114, 276]; 2011 SMR Regular Force males: 183%; [95%CI: 114, 281]). This pattern was similarly observed among the separately assessed Regular Force males.
- Among Regular Force females, the SMR for 2001 to 2022 was 171% and statistically significant (95% CI: 107, 258), which indicated a suicide rate that was 71% higher relative to the Canadian female population. There was some fluctuation over time. The SMR for 2005-2014 was 215% and it was the only period that demonstrated a statistically significant increase (95% CI: 111, 377); however, this was largely attributable to the higher than usual three female suicide deaths that occurred in 2012, resulting in the only single year SMR among females that was statistically significant (SMR: 522%; [95%CI: 108, 1525]). For the more recent 2015-2022 period (eight years), the SMR was 143% and although it suggests that the suicide rate was still elevated relative to the female Canadian population, it was not a statistically significant difference.
- Among Regular Force personnel, five-year average suicide rates tended to be higher among those with a deployment history over 1995 to 2023, apart from 1995-1999 when rates were similar and 2015-2019 when rates were higher among those with no deployments; however, the differences were not statistically significant.



Note: This plot includes only Regular Force males from 1995-2000.

Figure 1: CAF Regular Force Annual and Five-Year Average Annual Suicide Rates with 95% Confidence Intervals (1995-2023).



Note: This plot includes only Regular Force males from 1995-2000.

Figure 2: Annual and Five-Year Standardized Mortality Ratios (SMRs), with 95% Confidence Intervals, Comparing Regular Force Suicide Rates to those in the Canadian General Population (1995-2022).

Environmental Command

Figure 3 provides a summary of the annual and five-year unadjusted suicide death rates among Regular Force personnel in each of the environmental commands over 2002 to 2023, and similar data is separately plotted for males and females in Figures A5 and A6 of Appendix 2.

Key Observations:

- The annual rate pattern varied among the different commands. A comparison of the five-year average annual suicide rates indicated no consistent pattern. The environmental command with the highest, or lowest, suicide rate changed from period-to-period and the overlapping confidence intervals indicated that the differences were not statistically significant. This pattern was similarly observed among the separately assessed Regular Force males.
- Among Regular Force females, ten-year average annual suicide rates were compared between Army and non-Army environmental commands over 2002 to 2023, and by each command for the full 2002-2023 period. These rate comparisons indicate only small relative magnitude differences in rates by commands with time, and the differences were not statistically significant.

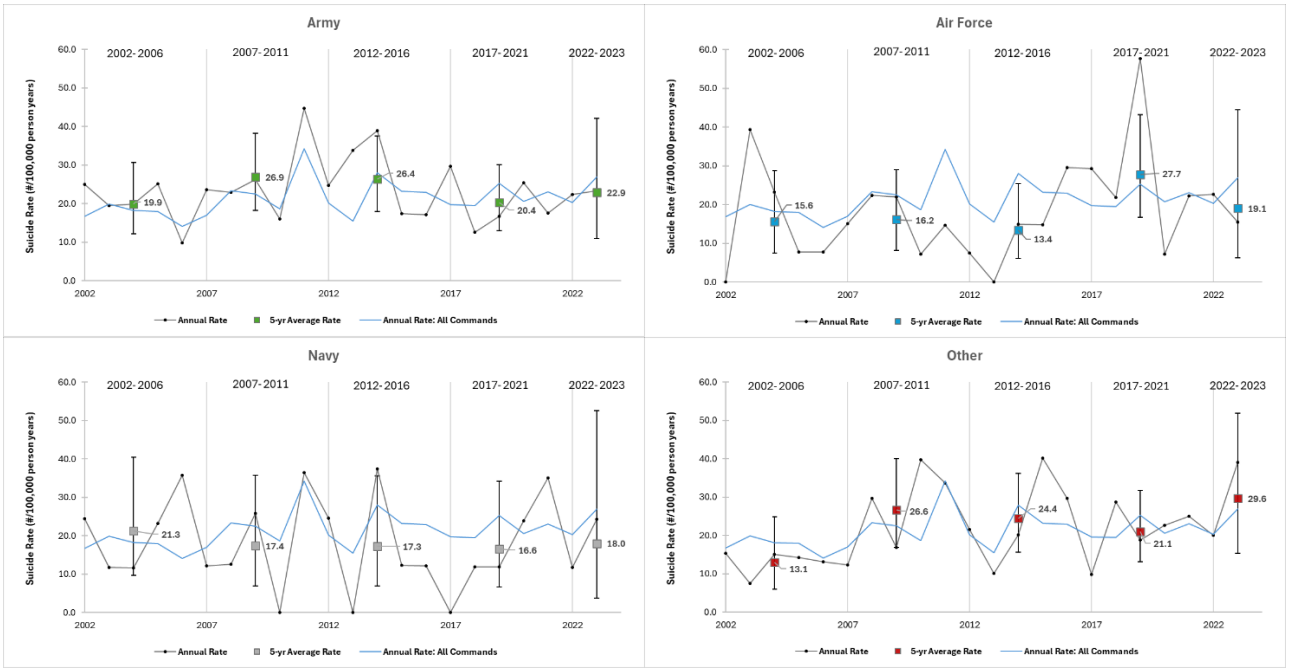


Figure 3: Annual and Five-Year Average Annual Suicide Rates for Each Environmental Command among CAF Regular Force Personnel (2002-2023).

3.2 Results from the Medical Professional Technical Suicide Review Reports, 2023 Updates

3.2.1 Mental Health

MPTSRs were completed for all 17 of the 2023 CAF Regular Force suicides and a summary of the documented active mental health-related issues that were present at the time of death are provided in Table 2 and similarly, this data is provided separately for males and females, in Table A3 of Appendix 2. Among these 17 suicides in 2023:

- 59% had documented evidence of prior suicidal ideation and/or prior suicide attempts.
- The most common method of suicide was hanging (59%), see Figure 4.
- 65% had at least one of the mental disorder and 60% had at least two.
- The most common mental health factors were as follows:
    - 47% had an addictions or substance use disorder,
    - 35% had a depressive disorder,
    - 35% had a trauma and stress-related disorder,
    - 35% had a traumatic brain injury,
    - 29% had an anxiety disorder.
- MPTSRs do not provide an indication as to whether these mental health concerns were related to operational stress[4]; however, it does attempt to provide an indication as to whether the suicide was related to a deployment and for this query, 'no' or 'unknown' was recorded for all 17 individuals in 2023.

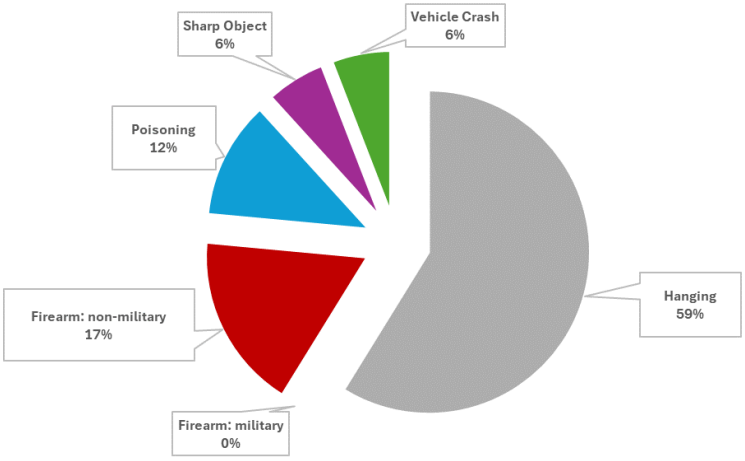


Figure 4: Method of Suicide Death among CAF Regular Force Personnel (2023).

[4] As defined in the Surgeon General's Mental Health Strategy, "*… the term "Operational Stress Injury" (OSI) is not a diagnosis; rather it is a grouping of diagnoses that are related to injuries that occur as a result of operations. The most common OSIs are PTSD, major depression and generalized anxiety. This term has helped break down several barriers to care and reduce the stigma surrounding mental illness.*"

Table 2: Diagnosed Mental Disorders Present at the Time of Suicide Death among Regular Force Personnel (2023).

Mental disorders		**#[a]**	**%**
i)	Depressive disorders	6	35.3%
ii)	Trauma and stress-related disorders:	6	35.3%
	PTSD	2	11.8%
	Other	4	23.5%
iii)	Anxiety disorders	5	29.4%
iv)	Addictions or a substance-use disorder	8	47.1%
v)	Traumatic brain injury (ever)[b]	6	35.3%
vi)	Personality disorders (ever identified)[b]	2	11.8%

[a] The total does not equal 100% as not all individuals were diagnosed with a mental disorder at time of death, and some individuals had more than one of the listed disorders.
[b] Determined to be an active concern if it occurred during an individual's life history.

3.2.2 Work and Life Stressors

Work and life stressors identified for the Regular Force suicide deaths in 2023 are provided in Table 3 and similarly, this data in provided separately for males and females, in Table A4 of Appendix 2. Among the 17 CAF member suicides in 2023:

- 94% had at least one reported stressor and 71% had two or more.
- The most common stressors were as follows:
    - 65% had physical health problem,
    - 59% had a failed or failing spousal or intimate partner relationship,
    - 59% had a job, supervisor or work performance problem,
    - 35% had a spousal, family or friend death by suicide.
- 24% had a documented history of being a victim of physical, sexual and/or emotional abuse or assault during their lifetime.
- 29% had been experiencing legal, disciplinary or 'other' proceedings prior to their death.
- 12% were in the process of being released from the CAF at the time of their death (medical releases).

Table 3: Prevalence of Documented Work and Life Stressors among Regular Force Personnel Prior to Suicide Death (2023).

Work and life stressors	#[a]	%
Failed or failing spousal or intimate partner relationship	10	58.8%
Failed or failing other relationship (e.g., family, friends)	2	11.8%
Spousal, family or friend death by suicide (ever)[b]	6	35.3%
Family or friend death (other than suicide)	1	5.9%
Physical health problem	11	64.7%
Chronic illness in spouse or family member	1	5.9%
Excessive debt, bankruptcy or financial strain	3	17.6%
Job, supervisor or work performance problem	10	58.8%
Legal problems (e.g., child custody dispute, litigation)	1	5.9%

[a] The total does not equal 100% as some individuals had no indication of the measured stressors and others had more than one.
[b] Determined to be an active concern if it occurred during an individual's life history.

4. Data Limitations

1) The numbers on which these analyses were based are small and vary from year-to-year; consequently, these findings must be interpreted with caution.

2) An individual's last known environmental command came from the human resources database. It does not evaluate the amount of time an individual was in the environmental command, or whether they had just recently been posted to that command.

3) The data for this study were taken from the DHRIM system and to some degree, Statistics Canada, both of which receive periodic updates and data cleaning. Consequently, the data and computed rates may vary from one report to another depending on when data were retrieved.

4) The MPTSR data provided a summary of the mental health factors and stressors that were experienced by those who died by suicide, but similar information among the underlying population was unavailable. Without this information among the underlying population, it was not possible to identify the relative importance of these factors and stressors or to estimate the magnitude of their link to suicide and suicide risk in the Regular Force population. However, the included data do provide an important description of the mental health and stressors that were experienced by individuals around their time of death and these factors are known to have a link to suicide risk.

6) Finally, the wide confidence intervals for many of the rates reported here indicate that in some cases, the analyses may not have a high enough power to detect differences.

5. Conclusions

The following conclusions of the 2024 analysis of CAF Regular Force deaths due to suicide are consistent with those of past years and should be considered together with the limitations discussed above.

1) Among both Regular Force males and females, unadjusted suicide rates tended to be higher in personnel younger than 45 years, males, unmarried/non-common law (particularly separated, divorced or widowed marital status), non-officer ranks (particularly JNCM ranks) and the Army combat arms occupation, and this was a generally consistent pattern across 2010 to 2023. In contrast, the environmental command with the highest suicide rate, and whether those with a deployment history had a higher rate, varied a little over time. In 2023, Regular Force suicide rates were highest among those in the other, non-specific, environmental command and among those with a deployment history.
2) Over 1995 to 2023 annual suicide rates fluctuated among CAF Regular Force personnel but there has been no statistically significant change in the 5-year suicide rate.
3) The five-year SMRs computed over 1995-2022 suggest that from 2010 onwards there has been a tendency for suicide rates to be higher among Regular Force personnel relative to those in the Canadian general population but these increases were not statistically significant. However, among the single year SMRs calculated since 2010, the SMR in 2011 for males and 2012 for females were both statistically significant, indicating a higher suicide rate relative to civilians.
4) The assessment of the MPTSRs continues to support a multifactorial causal pathway for suicide rather than a direct link with a single risk factor. Among the Regular Force suicides in 2023, there was a high prevalence of mental disorders (65% had at least one) and work or life stressors (94% had at least one). The most prominent work or life stressors were physical health problems (65%), a failing spousal/intimate relationship (59%) and job, supervisor or work performance problems (59%). The most common method of suicide in 2023 was hanging (59%), followed by non-military firearm (17%).

6. Appendix

Appendix 1: Data Sources and Methods

A1. Data Sources and Methods

A1.1 Data Sources

A1.1.1 Medical Professional Technical Suicide Review

Data on suicide risk factors (mental health and psycho-social factors reported to be associated with suicide deaths) are collated from the Medical Professional Technical Suicide Reviews (MPTSR). MPTSRs are requested by the Canadian Forces Health Services (CFHS) when a death is deemed to have been due to suicide and are conducted by military medical professionals. This team reviews all pertinent health records and conducts interviews with family members, health care providers and colleagues who worked with the member and who may be knowledgeable about the circumstances of the death. MPTSRs began in 2010 as a Quality Assurance tool within the CFHS to provide the Surgeon General with observations and recommendations for optimising suicide prevention efforts within CFHS. All MPTSR information is collected and managed by the Directorate of Mental Health (DMH).

Six mental health factor categories and nine work and life stressor categories were enumerated. Each was identified as present if it was documented and considered an active issue around the time of death. In some instances, a mental health factor or stressor was identified as suspected or unknown when there was no, or insufficient, documentation to definitively indicate its presence or absence as an active issue. While these suspected or unknown instances were uncommon, these factors or stressors were considered absent in the calculation of statistics. Additionally, it should be noted that all members were exposed to stressors associated with the COVID-19 pandemic during 2020 to 2022. For some, this added stressor may have increased the risk of suicide, either directly or indirectly through its influence on other stressors; however, the contribution of the pandemic to suicide deaths was not captured in the MPTSR investigations and as such, no valid conclusion can be drawn about its influence. The mental health factor categories included:

1) depressive disorders: i) disruptive mood dysregulation disorder; ii) major depressive disorder, single and recurrent episodes; iii) persistent depressive disorder (dysthymia); iv) premenstrual dysphoric disorder; v) substance/medication-induced depressive disorder; vi) depressive disorder due to another medical condition; vii) other specified depressive disorder; and viii) unspecified depressive disorder.

2) trauma and stressor-related disorders: i) reactive attachment disorder; ii) disinhibited social engagement disorder; iii) posttraumatic stress disorder; iv) acute stress disorder; v) adjustment disorders; vi) other specified trauma- and stressor-related disorder; and vii) unspecified trauma- and stressor-related disorder.

3) anxiety disorders: i) separation anxiety disorder; ii) selective mutism; iii) specific phobia; iv) social anxiety disorder (social phobia); v) panic disorder; vi) panic attack; vii) agoraphobia; viii) generalized anxiety disorder; ix) substance/medication-induced anxiety disorder; x) anxiety disorder due to another medical condition; xi) other specified anxiety disorder; and xii) unspecified anxiety disorder.

4) addictions or substance-use disorders;

5) traumatic brain injury: considered to be an active issue if it occurred at any time in an individual's past; and

6) personality disorders: considered an active issue if it was identified at any time in an individual's past

The work and life stressor categories included:

1) failed or failing spousal or intimate partner relationship;

2) failed or failing other relationship (e.g., family, friends);

3) spousal, family or friend death by suicide (considered to be an active issue if it had occurred at any time in an individual's past);

4) family or friend death (other than suicide);

5) physical health problem;

6) chronic illness in spouse or family member;

7) excessive debt, bankruptcy or financial strain;

8) job, supervisor or work performance problem; and

9) legal problems (e.g., child custody dispute, litigation**).**

A1.1.2 Epidemiological Surveillance

Information on the number of suicides and demographic information was obtained from the Directorate of Casualty Support Management (DCSM) up to 2012. As of September 2012, suicides were tracked and data were provided by DMH. DMH cross-references their results with those collected by the Administrative Investigation Support Centre (AISC), which is part of the Directorate Special Examinations and Injuries (DSEI).

Information on deployment history and CAF population data (i.e., age, sex, marital status, rank, unit, command, Military Occupational Structure ID/Military Occupation code (MOSID/MOC) and deployment history) for active members, as of July 1st of a given year, originated from the Directorate of Human Resources Information Management (DHRIM). History of deployment was based on data obtained from DHRIM and deployments were defined to include all international assignments with a location outside of Canada and the U.S. and, when determinable, excluded training, exercises and meetings with international partners. It should be noted that the number of active personnel who were serving in a given year and those with a history of deployment occasionally changes from previous reports due to the continual updating of DHRIM records. Additionally, command was categorized into one of four environmental command groupings (Army, Air, Navy or other command) based on individuals' last specified command or in some cases, unit information. Moreover, the 2009 to 2023 population data that were used in various rate calculations were updated with data obtained in 2024 for this current report. As such, rates for periods that include these years may have changed relative to previous year reports.

Canadian suicide counts by age and sex were obtained from Statistics Canada. Data were available up to 2022 at the time of preparation of this report. Canadian suicide rates are derived from death certificate data collected by the provinces and territories and collated by Statistics Canada. Codes utilized for this report were

ICD-9 E950-E959 (suicide and self-inflicted injury) in the Shelf Tables produced by Statistics Canada from 1995 to 1999. For 2000 to 2021 the number of suicide deaths was based on ICD-10 codes X60-X84 and Y87.0 utilizing Table 13-10-0394-01 'Leading causes of death, total population, by age group' from Statistics Canada. During Statistics Canada's production of each year's death statistics, data from previous years may have been revised to reflect any updates or changes that had been received from the provincial and territorial vital statistics registrars. Open verdict cases (ICD-9: E980-E989; ICD-10: Y10-Y34, Y87.2) are excluded by Statistics Canada[5], although they are routinely included in suicide statistics reported elsewhere (e.g., UK – both in civilian and military contexts). To ensure valid comparisons, the Statistics Canada exclusions were followed for these analyses. Canadian population (CGP) denominators up to 2000 were taken from Statistics Canada CANSIM Table 051-0001; from 2000 onwards, they were taken from Table 17-10-0005-01 'Population estimates on July 1st, by age and gender'.

For the CAF members who died from suicide, information on date of birth, sex, last reported marital status, rank, component, environmental command, MOSID/MOC, deployment history and last known unit were obtained through a request to the Directorate of Human Resources Information Management (DHRIM) and for each year from 2001 to 2023, most recent year updates came from data received in 2024. Environmental command was categorized as Army (i.e., Canadian Army), Navy (i.e., Royal Canadian Navy), Air Force (i.e., Royal Canadian Air Force) and 'other' (i.e., all other command designations). In most cases, environmental command was explicitly stated in the DHRIM data but for the small subset where it wasn't specified, the last specified unit was used to assign a command grouping. This method was also used to assign command for the CAF population that was used in calculating rates.

MOSID information for the analysis involving the Army combat arms occupation was obtained directly from DHRIM. Individuals were considered to be employed in the Army combat arms occupation if they had the following MOSIDs: 00005 (CRMN), 00008 (ARTYMN-FD), 00009 (ARTYMN-AD), 00010 (INFMN), 000178 (ARMD), 000179 (ARTY), 000180 (INF), 000181 (ENGR), 00339 (CBT ENGR) and 00368 (ARTYMN) (since 2012).[6]

A1.2 Methods

Unadjusted CAF Regular Force suicide rates were calculated for various periods over 1995 to 2023. For a single year, an unadjusted suicide rate is the total number of events, or count, in that year divided by the mid-year total population and multiplied by 100,000, although a different constant that is a multiple of 10 can be used. As a result, the unadjusted rates within this report are defined as the number per 100,000 population per year (i.e., person years) but may be calculated over a single year or over multiple years, such as a single year rate, a 5-year average rate or a10-year average rate. When calculated over multiple years, these rates make use

[5] Statistics Canada causes of death mapping between ICD-9 and ICD-10, intent of injury not known maps from ICD-9: E980-E989 to ICD-10: Y10-Y34, Y87.2, as per https://www150.statcan.gc.ca/n1/pub/82-003-x/2013007/article/11852/tbl/appb-eng.htm.

[6] Details on the different MOSIDs, including the general duties associated with them, are available at: https://www.canada.ca/en/department-national-defence/corporate/policies-standards/medical-standards-military-occupations/minimum-medical-standards-for-officers-and-non-commissioned-members.html.

of person time[7] at-risk for the denominator. Here, the total number of deaths for the multi-year period is divided by the sum of the population at-risk from each year, to give a per year rate for the period.

Within this report, the rates are largely reported as a number per 100,000 and this is the short form for a number per 100,000 population per year for the specified period. Additionally, the periods for which rates were calculated tended to be broader for Regular force females (i.e., predominantly 10-year periods) relative to Regular Force males (i.e., predominantly 5-year periods) to produce more stable estimates; less stable estimates are ones that can change substantially with the addition or subtraction of a single case, and which result in confidence intervals that are excessively broad. Suicide rates prior to 1995 have not been calculated as the historical method of ascertainment of suicides within the CAF was not well defined for that period.

To compare CAF Regular Force suicide rates with the Canadian population (CGP) rates, the indirect method of standardization by age and sex was used to provide Standardized Mortality Ratios (SMRs) for suicides up to 2022. When stratifying analyses by sex, the SMRs standardized on age. This method controls for the difference in the population age and sex distribution when comparing between the CAF Regular Force and general Canadian populations. An SMR is the observed number of cases divided by the number of cases that would be expected in the population at risk based on the age and sex-specific rates of a standard population (the CGP in this case) expressed as a percentage. Therefore, an SMR less than 100% indicates that the population in question has a lower rate than the CGP, while an SMR greater than 100% indicates a higher rate.

The calculation of confidence intervals (CIs) for statistics from population data are provided in this report for those who may want to generalize or compare the results between years or to other defined populations. Confidence intervals were calculated for the CAF Regular Force suicide rates and SMRs and these were generated as Poisson distribution 95% confidence limits that used the exact method described by Breslow and Day [3].

Confidence intervals are typically used as a measure of uncertainty around a statistical estimate (e.g., a sample mean or mortality rate) when working with samples from a defined population. However, when statistics such as suicide rates are computed from a completely enumerated population, questions of statistical stability are less relevant to these calculated rates, as everybody in the population is counted. Errors associated with the process of data collection, the coding of cause of death, or in the estimation of the population denominators are usually of greater concern. In such situations, a calculated suicide rate and its confidence interval simply represents a characterization of how the probability of a suicide death is distributed in a population. Under this approach, the rate represents the mean or expected value from a population where it's assumed that the probability of a suicide death is distributed according to a known theoretical distribution (e.g., Poisson distribution) and as such, some individuals who did not die had a non-zero probability of death from suicide. Ultimately, this permits a comparison of one population's rate, and distribution, to another population. The confidence intervals provide some guidance as to whether the two population estimates are comparable (i.e., when confidence intervals overlap) or different (i.e., when confidence intervals do not overlap) with a certain

[7] Person time is defined as "*a measurement combining person and time as the denominator in incidence and mortality rates when, for varying periods, individual subjects are at risk of developing disease or dying. It is the sum of the periods of time at risk for each of the subjects.* ***The most widely used measure is person-years,***" (emphasis added) [4].

level of statistical probability. The p=0.05 level is used to determine whether two population distributions are different with statistical significance.

Appendix 2: Additional Figures and Tables

Table A1: Rate of Suicide Among Regular Force Males by Various Characteristics.

	2010 - 2014	2015 - 2019	2020 – 2023	
	Rate per 10^5 (95% CI)	**Rate per 10^5 (95% CI)**	**# (%)**	**Rate per 10^5 (95% CI)**
Age				
15-29	27.1 (17.9, 39.6)	28.5 (19.0, 41.4)	17 (32.1%)	23.4 (13.6, 37.4)
30-44	25.4 (17.3, 36.1)	27.9 (19.5, 38.6)	30 (56.6%)	27.8 (18.8, 39.8)
45-59	18.0 (8.6, 33.1)	9.3 (3.0, 21.6)	6 (14.7%)	15.8 (5.8, 34.4)
Mean age (95% CI)	33.3 (31.2, 35.3)	33.1 (31.0, 35.3)		34.3 (32.1, 36.4)
Median age	31	34		34
Marital status				
Married/CL	17.8 (12.0, 25.5)	17.7 (11.8, 25.4)	20 (37.7%)	16.4 (10.0, 25.3)
Single	32.9 (22.2, 47.1)	30.1 (20.5, 42.8)	25 (47.2%)	28.9 (18.7, 42.8)
Separated/ Divorced/ Widowed	54.0 (23.3, 106.5)	64.5 (29.6, 122.6)	8 (15.1%)	81.3 (35.0, 160.1)
Rank				
JNCM	32.7 (24.3, 43.1)	29.3 (21.4, 39.3)	33 (62.3%)	28.1 (19.3, 39.5)
SNCM	15.2 (7.3, 28.0)	21.1 (11.5, 35.5)	15 (28.3%)	29.8 (16.7, 49.2)
Officer	13.7 (5.9, 26.9)	16.3 (7.8, 30.0)	5 (9.4%)	9.9 (3.2, 23.0)
Command				
Army	31.9 (22.3, 44.4)	20.7 (13.0, 31.3)	19 (35.8%)	23.5 (14.2, 36.7)
Air	8.5 (2.8, 19.9)	32.2 (19.4, 50.2)	9 (17.0%)	19.6 (9.0, 37.3)
Navy	22.3 (9.6, 44.0)	11.1 (3.0, 28.3)	8 (15.1%)	27.7 (12.0, 54.6)
Other	27.3 (16.7, 42.0)	30.1 (19.3, 44.5)	17 (32.1%)	26.9 (15.7, 43.1)
Army combat arms				
Yes	43.4 (29.7, 61.4)	35.5 (23.2, 52.2)	14 (26.4%)	25.2 (13.7, 42.3)
No	17.7 (12.4, 24.5)	20.7 (15.0, 27.9)	39 (73.6%)	24.0 (17.0, 32.7)
History of deployment				
Yes	25.9 (18.6, 35.2)	22.3 (15.3, 31.3)	30 (56.6%)	26.5 (17.9, 37.8)
No	22.7 (14.9, 33.1)	27.1 (19.0, 37.5)	23 (43.4%)	21.9 (13.9, 32.8)

Table A2: Rate of Suicide Among Regular Force Females by Various Characteristics.

	2010 - 2019	2020 - 2023	2014 – 2023 (prior 10yrs)	
	Rate per 10^5 (95% CI)	Rate per 10^5 (95% CI)	# (%)	Rate per 10^5 (95% CI)
Age				
15-29	10.8 (2.2, 31.5)	16.4 (2.0, 59.0)	2 (16.7%)	6.9 (0.8, 24.9)
30-44	14.5 (5.8, 29.9)	13.9 (2.9, 40.5)	8 (66.7%)	15.6 (6.7, 30.7)
45-59	5.6 (0.1, 30.9)	13.2 (0.3, 73.7)	2 (16.7%)	10.5 (1.3, 37.8)
Mean age (95% CI)	32.7 (28.6, 36.8)	30.7 (24.0, 37.3)		33.4 (29.1, 37.8)
Median age	32	31		32.5
Marital Status				
Married/CL	5.6 (1.2, 16.3)	8.6 (1.0, 31.2)	5 (41.7%)	8.8 (2.9, 20.6)
Single	19.8 (7.3, 43.2)	27.3 (7.4, 69.9)	7 (58.3%)	20.8 (8.4, 42.9)
Separated/ Divorced/ Widowed	21.0 (2.5, 75.7)	0.0	0 (0%)	0.0
Rank				
JNCM	14.6 (5.9, 30.2)	20.6 (5.6, 52.6)	9 (75.0%)	18.6 (8.5, 35.4)
SNCM	9.4 (1.1, 34.0)	21.0 (2.5, 76.0)	3 (25.0%)	13.1 (2.7, 38.2)
Officer	8.0 (1.0, 28.9)	0.0	0 (0%)	0.0
Command				
Army	13.4 (2.8, 39.3)	10.5 (0.3, 58.6)	2 (16.7%)	8.7 (1.1, 31.4)
Air	16.3 (3.4, 47.5)	0.0	2 (16.7%)	10.6 (1.3, 38.2)
Navy	0.0	0.0	0 (0%)	0.0
Other	11.6 (3.8, 27.1)	25.8 (8.4, 60.1)	8 (66.7%)	17.2 (7.4, 33.9)
Army combat arms				
Yes	54.4 (6.6, 196.4)	0.0	1 (8.3%)	22.9 (0.6, 127.6)
No	10.0 (4.6, 18.9)	15.2 (5.6, 33.2)	11 (91.7%)	11.6 (5.8, 20.7)
History of deployment				
Yes	7.5 (1.5, 21.8)	18.5 (3.8, 54.1)	4 (33.3%)	9.9 (2.7, 25.3)
No	14.9 (6.4, 29.3)	11.9 (2.5, 34.8)	8 (66.7%)	13.6 (5.8, 26.7)

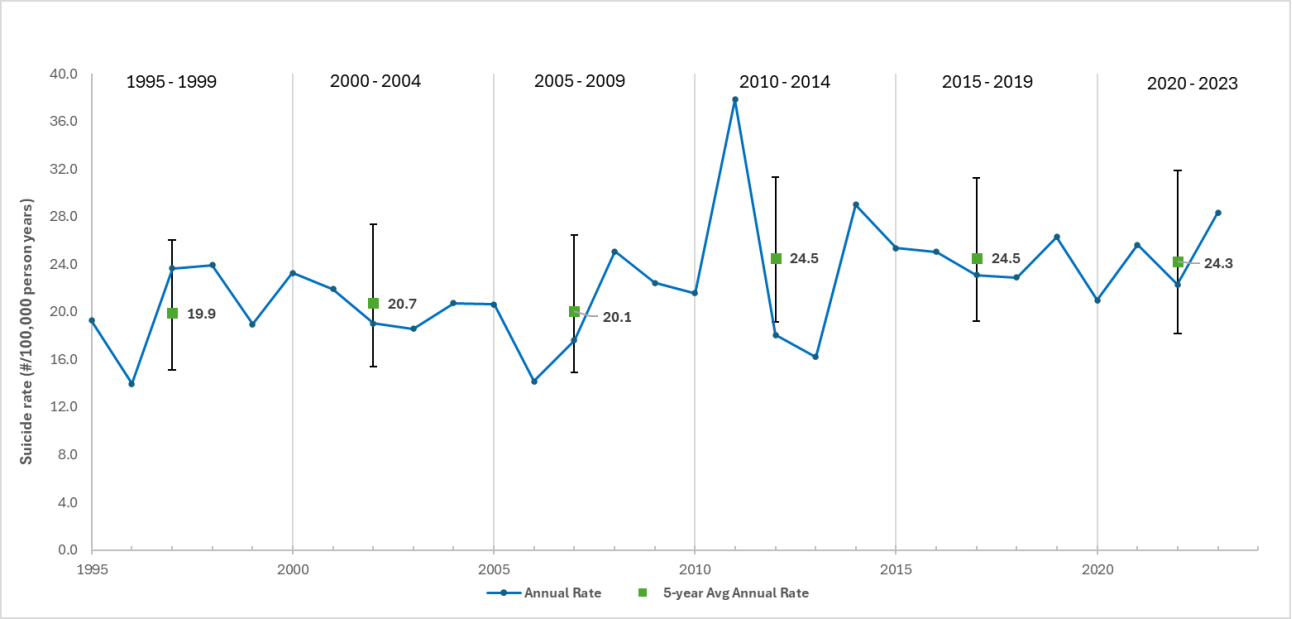


Figure A1: CAF Regular Force Male Annual and Five-Year Average Annual Suicide Rates with 95% Confidence Intervals (1995-2023).

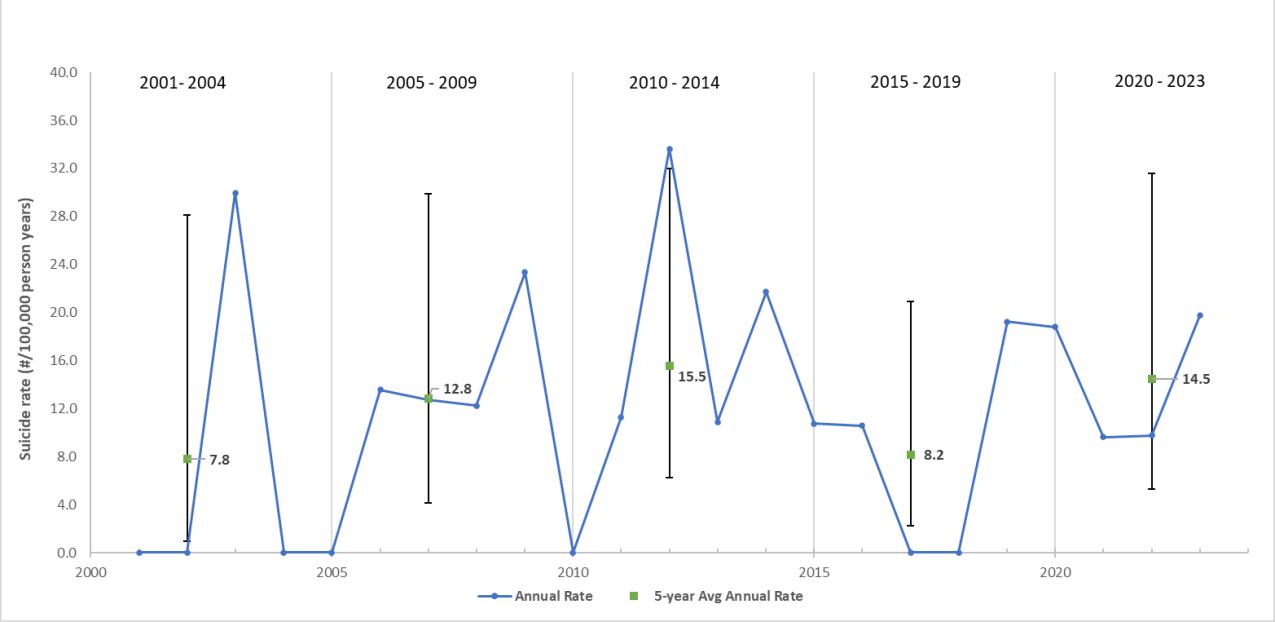


Figure A2: CAF Regular Force Female Annual and Five-Year Average Annual Suicide Rates with 95% Confidence Intervals (2001-2023).

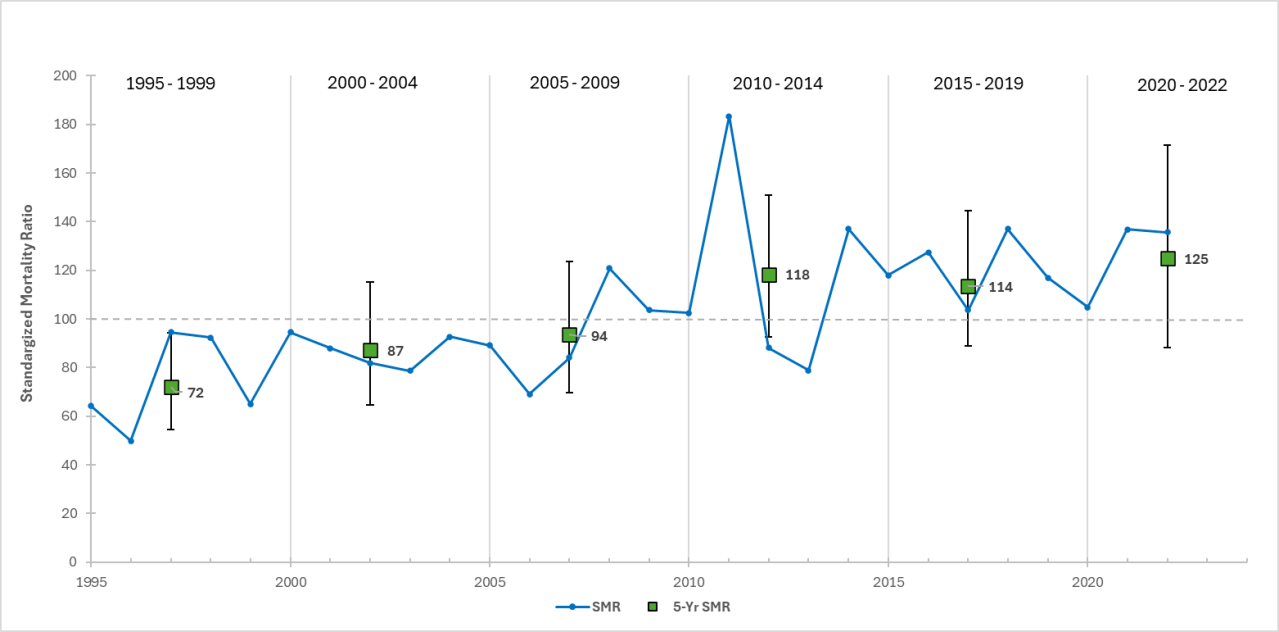


Figure A3: Comparison of CAF Regular Force Male Suicide Rates to Canadian Male Rates Using Standardized Mortality Ratios (SMRs) and 95% Confidence Intervals (1995-2022).

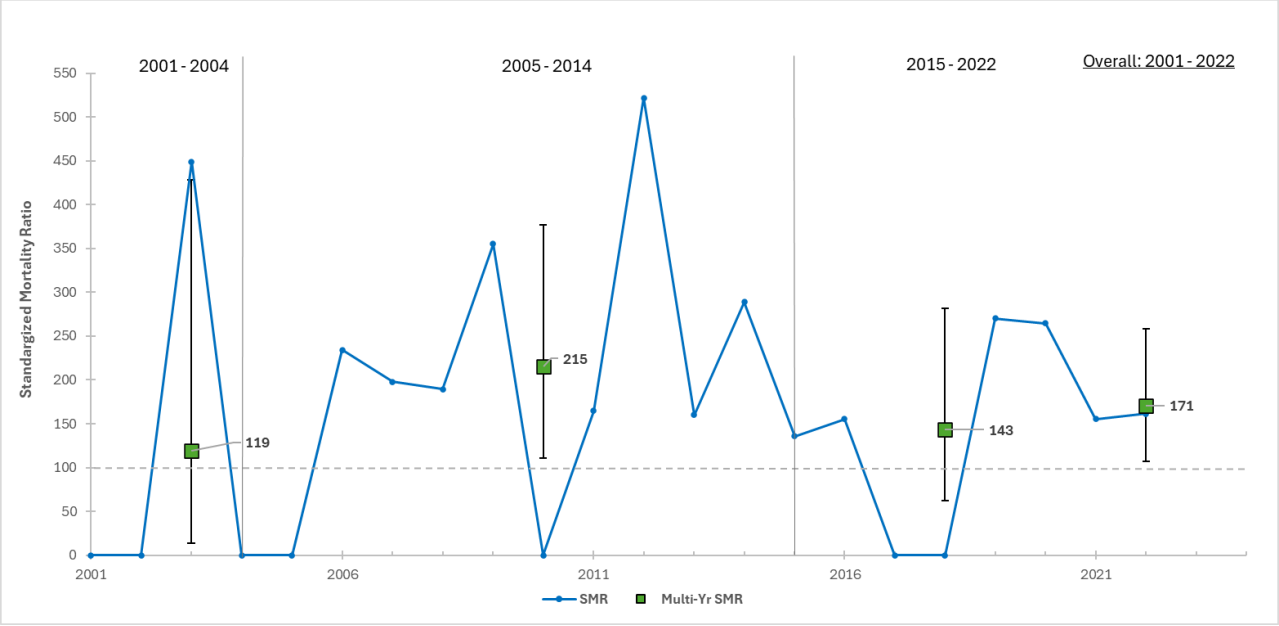


Figure A4: Comparison of CAF Regular Force Female Suicide Rates to Canadian Female Rates Using Standardized Mortality Ratios (SMRs) and 95% Confidence Intervals (2001-2022).

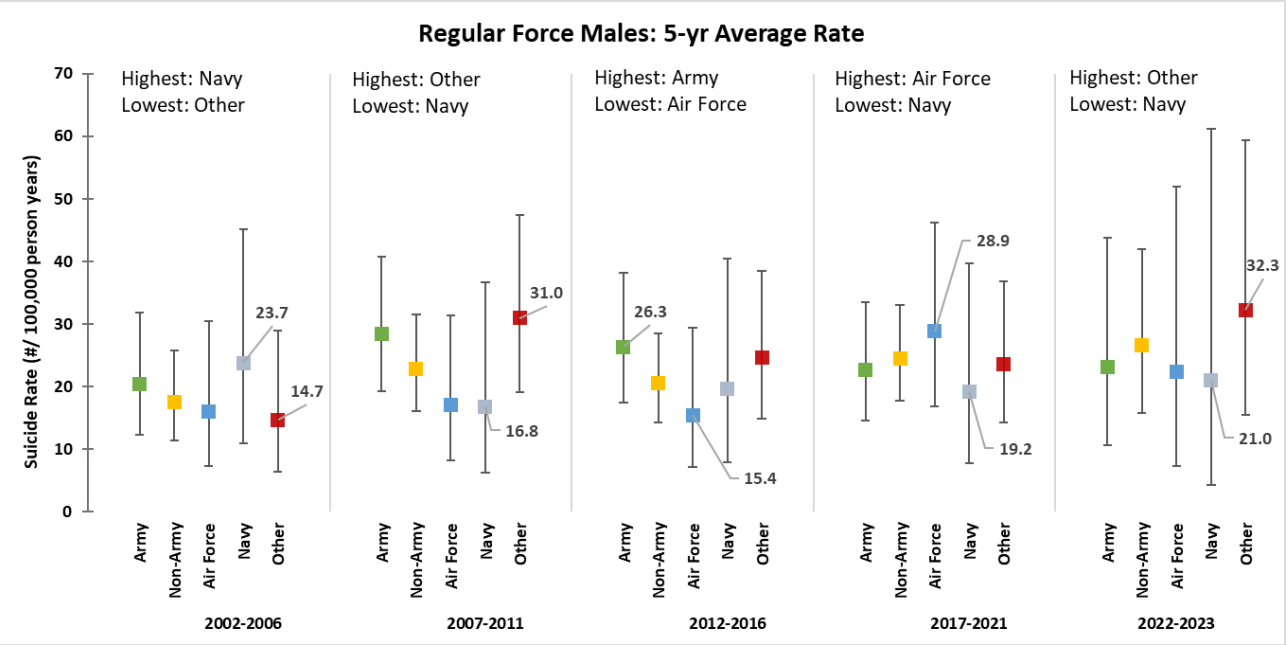


Figure A5: Five-Year Average Annual Suicide Rates, and Associated 95% Confidence Intervals, for Regular Force Males by Command (Army, Non-Army, Air Force, Navy and Other Commands) over 2002-2023.

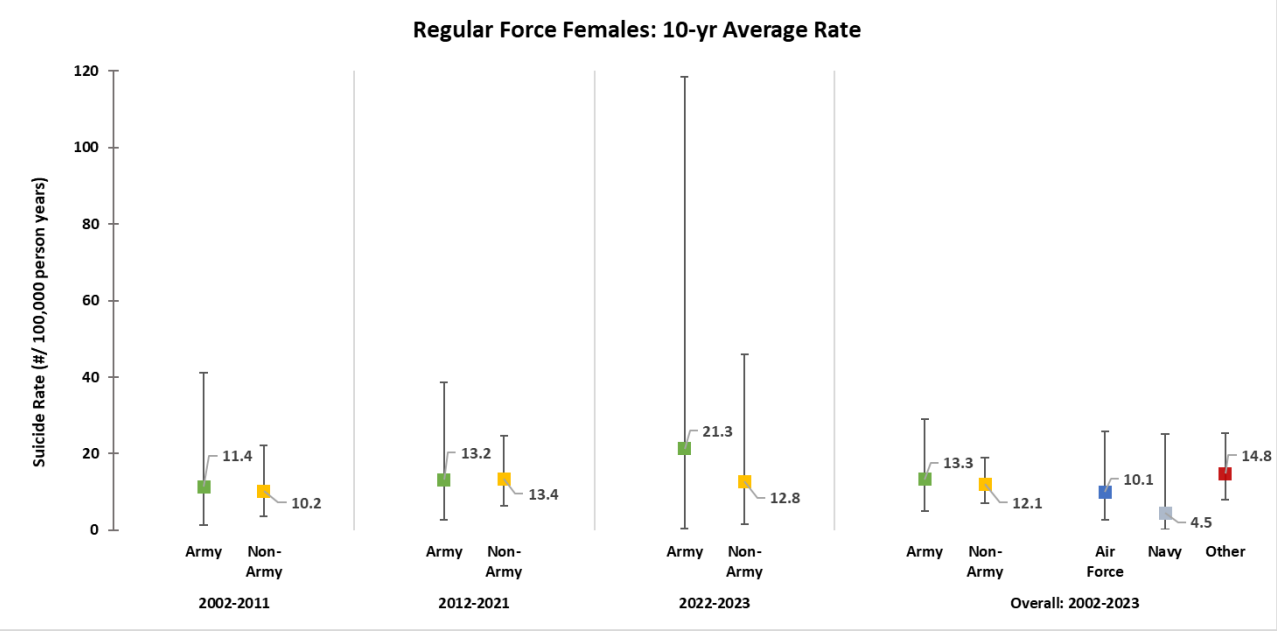


Figure A6: Multi-Year Average Annual Suicide Rates, and Associated 95% Confidence Intervals, for Regular Force Females by Command (dichotomized as Army and Non-Army Commands, but separately over the full period) over 2002-2023.

Table A3: Diagnosed Mental Disorders Present at the Time of Suicide Death, Separately among Regular Force Males and Females (2019-2023 and 2023).

Mental disorder		2019-2023 (# (%))[a]		2023 (# (%))[a]	
		Females (Total = 8)	**Males (Total = 66)**	**Females[c] (Total = 2)**	**Males (Total = 15)**
i)	Depressive disorders	4 (50.0%)	24 (36.4%)	-	4 (26.7%)
ii)	Trauma and stress-related disorders:	3 (37.5%)	24 (36.4%)	-	5 (33.3%)
	PTSD	1 (12.5%%)	10 (15.2%)	-	2 (13.3%)
	Other	2 (25.0%)	14 (21.2%)	-	3 (20.0%)
iii)	Anxiety disorders	3 (37.5%)	13 (19.7%)	-	4 (26.7%)
iv)	Addictions or a substance-use disorder	3 (37.5%)	30 (45.5%)	-	7 (46.7%)
v)	Traumatic brain injury (ever)[b]	0 (0%)	16 (24.2%)	-	6 (40.0%)
vi)	Personality disorders (ever identified)[b]	3 (37.5%)	5 (7.6%)	-	1 (6.7%)

[a] The total does not equal 100% as not all individuals were diagnosed with a mental disorder at time of death, and some individuals had more than one of the listed disorders.

[b] Determined to be an active concern if it occurred during an individual's life history.

[c] The total number of individuals was too low to describe.

Table A4: Prevalence of Documented Work and Life Stressors, Separately among Regular Force Males and Females prior to Suicide (2019-2023 and 2023).

Work and life stressors	2019-2023 (# (%))[a]		2023 (# (%))[a]	
	Females (Total = 8)	Males (Total = 66)	Females[c] (Total = 2)	Males (Total = 15)
Failed or failing spousal or intimate partner relationship	7 (87.5%)	36 (54.5%)	-	8 (53.3%)
Failed or failing other relationship (e.g., family, friends)	2 (25.0%)	10 (15.2%)	-	1 (6.7%)
Spousal, family or friend death by suicide (ever)[b]	2 (25.0%)	20 (30.3%)	-	5 (33.3%)
Family or friend death (other than suicide)	0 (0%)	4 (6.1%)	-	1 (6.7%)
Physical health problem	4 (50.0%)	29 (43.9%)	-	9 (60.0%)
Chronic illness in spouse or family member	3 (37.5%)	7 (10.6%)	-	1 (6.7%)
Excessive debt, bankruptcy or financial strain	3 (37.5%)	19 (28.8%)	-	2 (13.3%)
Job, supervisor or work performance problem	5 (62.5%)	34 (51.5%)	-	9 (60.0%)
Legal problems (e.g., child custody dispute, litigation)	0 (0%)	7 (10.6%)	-	1 (6.7%)

[a] The total does not equal 100% as some individuals had no indication of the measured stressors and others had more than one.

[b] Determined to be an active concern if it occurred during an individual's life history.

[c] The total number of individuals was too low to describe.

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12. ABSTRACT (Brief and factual summary of the document.)

Introduction: Each death from suicide is tragic. Suicide prevention is an important public health concern and is a top priority for the Canadian Armed Forces (CAF). In order to better understand suicide in the CAF and refine ongoing suicide prevention efforts, the Canadian Forces Health Services annually examine suicide rates and the relationship between suicide, deployment and other potential suicide risk factors. This analysis, conducted by the Directorate of Mental Health (DMH), is an update covering the period from 1995 to 2023.

Methods: This report assesses suicide data for Regular Force personnel over 1995 to 2023. It provides an interpretation of several statistics, including unadjusted suicide rates observed among various characteristics over time and Standardized Mortality Ratios (SMRs) that compare Regular Force suicide rates with those of the Canadian population. It also examines data from Medical Professional Technical Suicide Reviews (MPTSR) and summarizes the prevalence of mental health-related factors and work or life stressors that are known to be suicide death risk factors.

Results: In 2023, there were 17 suicide deaths among serving Regular Force personnel (15 male and 2 female) and 3 among Reservists. The Regular Force personnel suicide rate was 27.0 (95%CI: 15.7, 43.1) per 100,000 person years in 2023, an increase relative to 20.3 (95%CI: 10.8, 34.7) in 2022 and 23.1 (95%CI: 12.9, 38.1) in 2021. Among both Regular Force males and females, the unadjusted suicide rate tended to be higher in personnel younger than 45 years, males, unmarried/non-common law (particularly separated, divorced or widowed marital status), non-officer ranks (particularly JNCM ranks) and the Army combat arms occupation, with a generally consistent pattern across 2010 to 2023. In contrast, the environmental command with the highest suicide rate, and whether those with a deployment history had a higher suicide rate, varied a little across time. In 2023, suicide rates were highest among those in the other, non-specific, environmental command and among those with a deployment history. Moreover, the five-year annual suicide rate averages for the different commands indicated no consistent patterns; the command with the highest, or lowest, suicide rate changed from period-to-period, and the differences were not statistically significant.

Over 1995 to 2023, Regular Force suicide rates fluctuated among Regular Force personnel but there has been no statistically significant change in the five-year rate. The five-year age and sex Standardized Mortality Ratios (SMRs) computed over 1995-2022 suggest that from 2010 onwards, there has been a tendency for rates to be higher among Regular Force personnel relative to Canadian civilians, but these increases were not statistically significant. However, among the single year SMRs calculated since 2010, the SMR in 2011 for males and 2012 for females were both statistically significant, indicating a higher suicide rate relative to civilians.

Among the Regular Force suicides in 2023, there was a high prevalence of mental disorders (65% had at least one) and work or life stressors (94% had at least one). The most prominent work or life stressors were physical health problems (65%), a failing spousal/intimate relationship (59%) and job, supervisor or work performance problems (59%). The most common method of suicide in 2023 was hanging (59%), followed by non-military firearm (17%).

Conclusions: There has been minimal change in suicide death patterns during 2023 relative to recent prior years. Nonetheless, small numbers do limit the ability, or power, of statistical assessments to detect differences. The observations continue to support a multifactorial causal pathway for suicide, rather than a direct link with a single risk factor. CAF suicide prevention efforts should adapt as needed.

Introduction: Chaque décès par suicide constitue une tragédie. La prévention du suicide est un aspect important de la santé publique et une des grandes priorités des Forces armées canadiennes (FAC). Afin de mieux comprendre le suicide au sein des FAC et de parfaire les efforts continus en matière de prévention, les Services de santé des Forces canadiennes effectuent chaque année des analyses pour examiner les taux de suicide et la relation entre le suicide, le déploiement et d'autres facteurs de risque de suicide. La présente analyse, réalisée par le Directeur – Santé mentale (DSM), représente une mise à jour pour la période s'échelonnant de 1995 à 2023.

Méthodes: Le présent rapport évalue les données sur le suicide chez les membres de la Force régulière de 1995 à 2023. Il présente une interprétation de plusieurs statistiques, y compris les taux non ajustés de suicide observés selon diverses caractéristiques au fil du temps et les ratios standardisés de mortalité (RSM) qui comparent les taux de suicide de la Force régulière à ceux de la population canadienne. Il examine également les données tirées des examens techniques des suicides par des professionnels de la santé (ETSPS) et résume la prévalence des facteurs liés à la santé

mentale et des facteurs de stress au travail ou dans la vie qui sont connus pour être des facteurs de risque de décès par suicide.

Résultats: En 2023, il y a eu 17 décès par suicide chez les membres actifs de la Force régulière (15 hommes et 2 femmes) et 4 chez les réservistes. Le taux de suicide des membres de la Force régulière était de 27,0 (IC à 95 % : 15,7, 43,1) pour 100 000 personnes-années en 2023, une augmentation par rapport à 20,3 (IC à 95 % : 10,8, 34,7) en 2022 et à 23,1 (IC à 95 % : 12,9, 38,1) en 2021. Tant chez les hommes que chez les femmes de la Force régulière, le taux de suicide non ajusté avait tendance à être plus élevé chez les membres du personnel de moins de 45 ans, les hommes, les personnes non mariées ou en union libre (en particulier celles dont l'état matrimonial est séparé, divorcé ou veuf), les grades de non-officiers (en particulier les militaires du rang [subalternes] [MR sub]) et le groupe professionnel des armes de combat de l'Armée de terre, avec une tendance généralement constante de 2010 à 2023. En revanche, le commandement d'armée avec le taux de suicide le plus élevé, et si ceux qui avaient des antécédents de déploiement avaient un taux de suicide plus élevé, variait un peu au fil du temps. En 2023, les taux de suicide étaient les plus élevés parmi ceux des autres commandements d'armée non spécifiques et parmi ceux qui avaient des antécédents de déploiement. De plus, les moyennes annuelles du taux de suicide sur cinq ans pour les différents commandements n'ont indiqué aucune tendance cohérente; le commandement avec le taux de suicide le plus élevé, ou le plus faible, a changé d'une période à l'autre, et les différences n'étaient pas statistiquement significatives.

De 1995 à 2023, les taux de suicide au sein de la Force régulière ont fluctué entre les membres de la Force régulière, mais il n'y a pas eu de changement statistiquement significatif dans le taux sur cinq ans. Les RSM sur cinq ans selon l'âge et le sexe calculés sur la période 1995-2022 suggèrent qu'à partir de 2010, les taux ont eu tendance à être plus élevés chez les membres de la Force régulière que chez les civils canadiens, mais ces augmentations n'étaient pas statistiquement significatives. Toutefois, parmi les RSM d'une seule année calculés depuis 2010, celui en 2011 pour les hommes et en 2012 pour les femmes était statistiquement significatif, ce qui indique un taux de suicide plus élevé que celui des civils.

Parmi les suicides au sein de la Force régulière en 2023, il y avait une prévalence élevée de troubles mentaux (65 % en présentaient au moins un) et de facteurs de stress au travail ou dans la vie (94 % en présentaient au moins un). Les facteurs de stress les plus importants liés au travail ou à la vie privée étaient les problèmes de santé physique (65 %), l'échec de relations conjugales/intimes (59 %) et les problèmes liés à l'emploi, au superviseur ou au rendement au travail (59 %). La méthode de suicide la plus courante en 2023 était la pendaison (59 %), suivie des armes à feu non militaires (17 %).

Conclusions: Il y a eu un changement minime dans les tendances en matière de décès par suicide en 2023 par rapport aux dernières années. Toutefois, la faible quantité de données limite la capacité, ou le pouvoir, des évaluations statistiques de relever les différences. Les observations continuent d'appuyer la théorie d'un enchaînement de causalité multifactoriel plutôt qu'un lien direct entre des facteurs de risque individuels et le suicide. Les efforts de prévention du suicide au sein des FAC devraient s'adapter au besoin.

Mots clés : déploiement; Forces armées canadiennes; population canadienne; ratio de taux; ratio standardisé de mortalité; suicide; taux; taux ajusté selon l'âge.

13. KEYWORDS, DESCRIPTORS or IDENTIFIERS (Technically meaningful terms or short phrases that characterize a document and could be helpful in cataloguing the document. Use semi-colons as delimiters.)

Age-adjusted rate; Canadian Armed Forces; Canadian population; deployment; rate ratio; rates; standardized mortality ratio; suicide

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