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Research on suicide and its prevention: What the current evidence reveals and topics for future research

#suicideprevention

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May 22, 2019



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May 22, 2019



RESEARCH ON SUICIDE AND ITS PREVENTION:

What the current evidence reveals and topics
for future research

Presenter



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Dr. Sylvanne Daniels

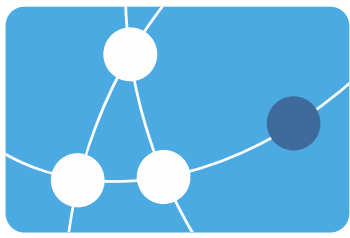
Coordinator, Quebec Network on
Suicide, Mood Disorders, and
Related Disorders



RÉSEAU QUÉBÉCOIS SUR LE SUICIDE,
LES TROUBLES DE L'HUMEUR
ET LES TROUBLES ASSOCIÉS

Douglas

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Scoping Review on Suicide Research in Canada and Beyond Since 2000

Sylvanne Daniels, MSc, PhD

*Webinar
May 22, 2019*

A project commissioned by MHCC-PHAC

Mandate

- Outline the key research topics in the field
- In which areas does Canada contribute to international literature?
- Extensive international literature search from 2000-2017
- Primary focus on systematic reviews
- Particular themes of interest:
 - Epidemiology
 - Clinical, demographic, and social factors
 - Biological factors
 - Prevention and screening
 - Treatment and interventions
 - Follow-up care and postvention
 - Services research

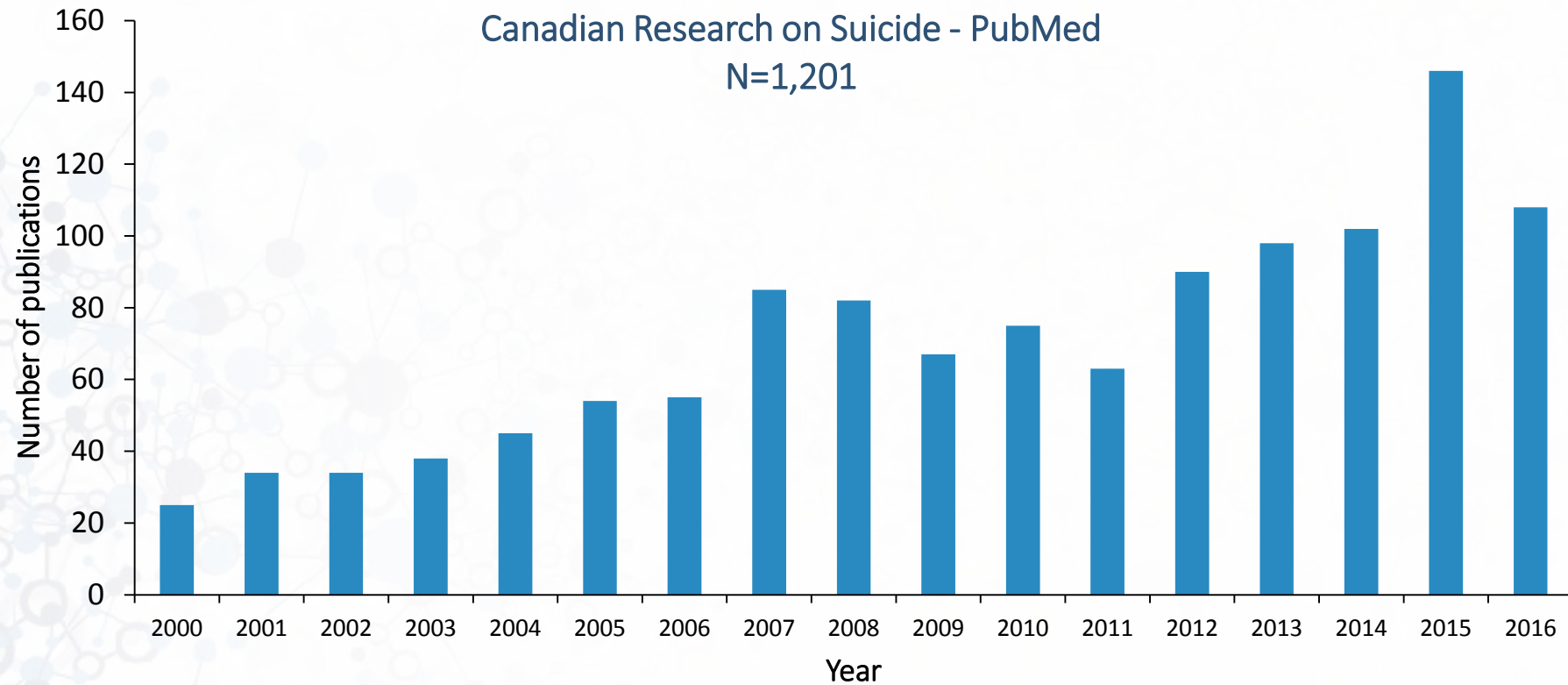


**CANADIAN CONTRIBUTIONS TO
INTERNATIONAL RESEARCH ON SUICIDE**

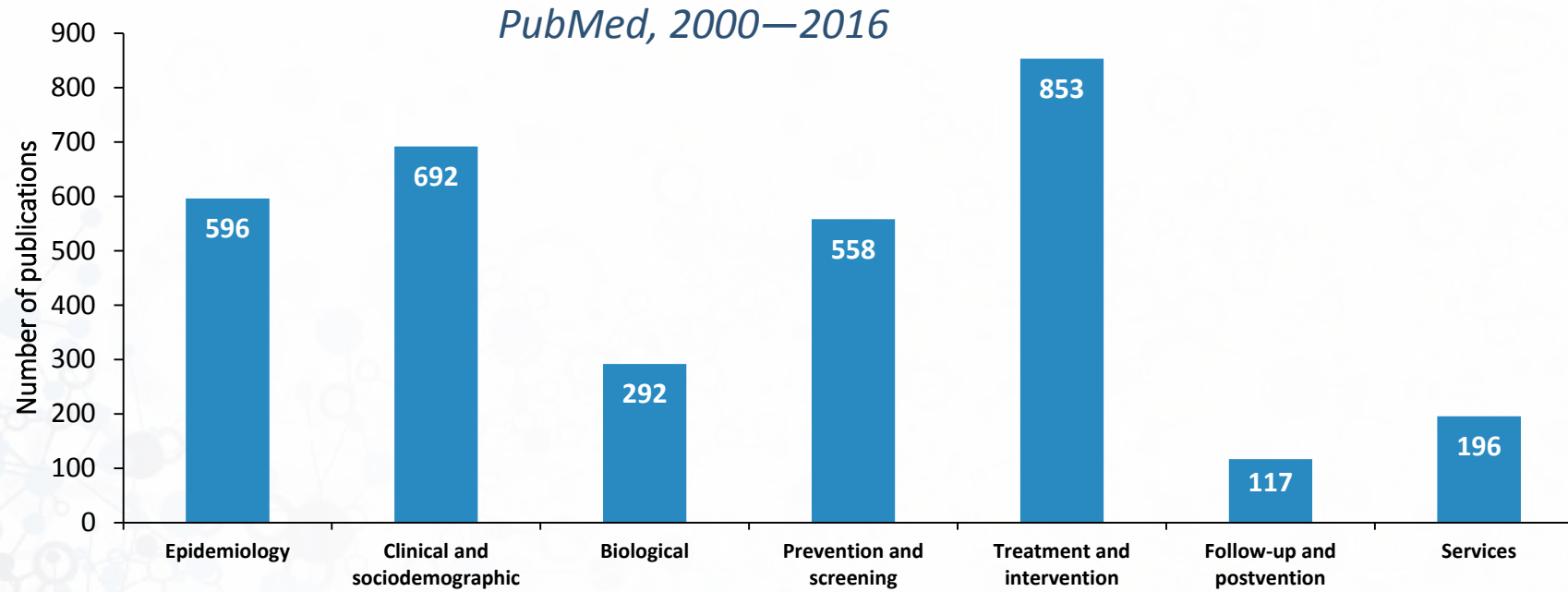
Suicide research in Canada

- Research on suicide is specialized but diverse: biological, clinical, social, etc.
 - Challenge for bibliometric analysis of the literature
 - Used of Medical Subject Headings terms; disambiguation of items: suicide (behavioural) vs. “cell suicide,” or apoptosis, and “suicide gene”
- Conducted the bibliometric aspect of the analysis in the PubMed database
 - Articles published between 2000—2016
 - Canadian studies identified based author affiliations including “Canada”, “Canadian”, “British Columbia”, “Alberta”, “Saskatchewan”, “Manitoba”, “Ontario”, “Quebec”, “Newfoundland”, “Prince Edward Island”, “New Brunswick”, “Nova Scotia”, “Nunavut”, “Yukon”, or “Northwest Territories”

Suicide research in Canada: PubMed



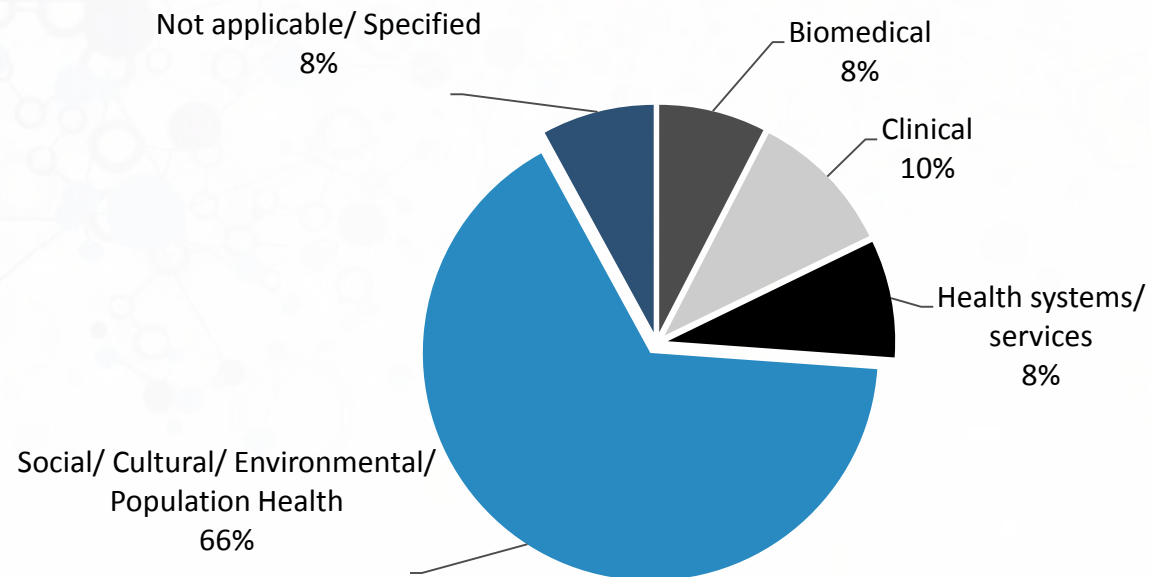
Suicide research in Canada: Distribution of Canadian Research on Suicide by Research Theme



THEME	SEARCH TERMS
Epidemiology	(epidemiology OR prevalence OR rate)
Clinical and sociodemographic	(clinical OR social OR demographic)
Biological	(biology OR genetic OR epigenetic OR biomarker OR imaging OR immunology OR lipid OR neurotransmitter OR neurotrophic OR stress)
Prevention and screening	(prevention OR screening)
Treatment and intervention	(treatment OR intervention OR pharmacotherapy OR psychotherapy)
Follow-up and postvention	(follow-up OR postvention OR bereavement)
Services	(services OR admission)

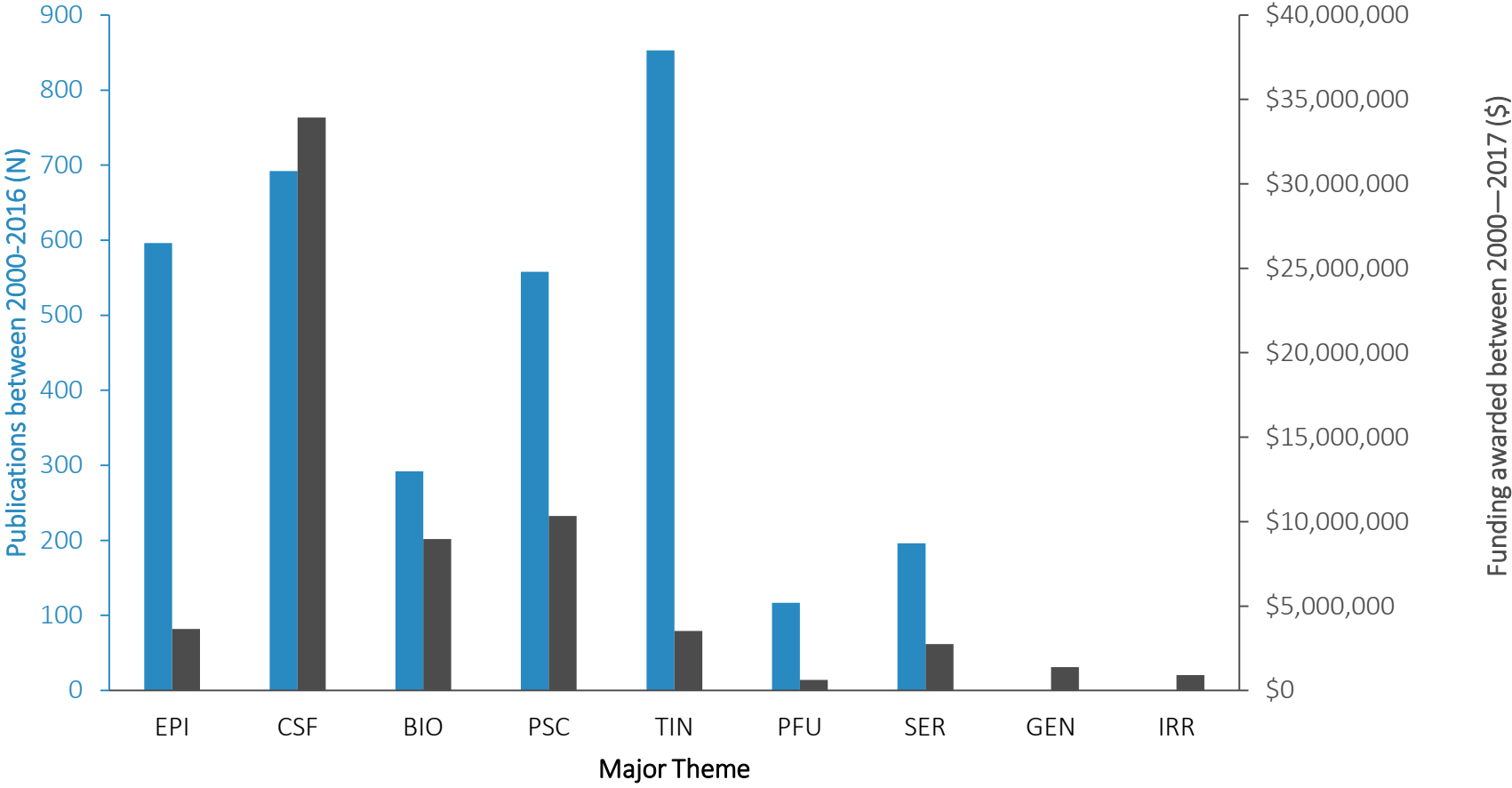
Suicide research in Canada: Distribution of funds per CIHR theme, number of projects funded

- Publicly available funding data from the tricouncil funding databases: CIHR, NSERC, SSHRC
- Projects funded since the 1999/2000 funding year
- Search term “suicid*”, excluding “cancer” and “apoptosis”
- 429 projects identified, 264 were deemed relevant after inspection of titles and keywords (when available)
- **\$43,751,828** total funding
- Projects attributed to each of the four CIHR research themes



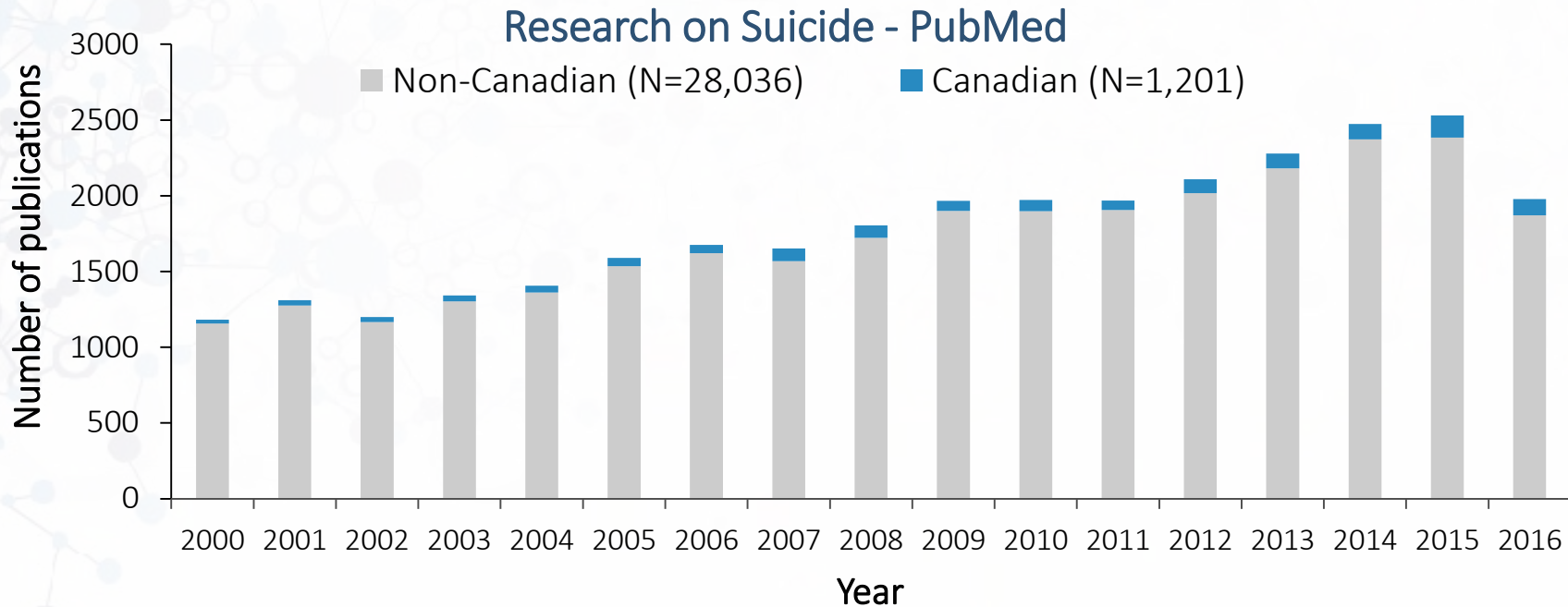
Suicide research in Canada: Comparison of funding and publication output per major theme

(with overlapping between themes)

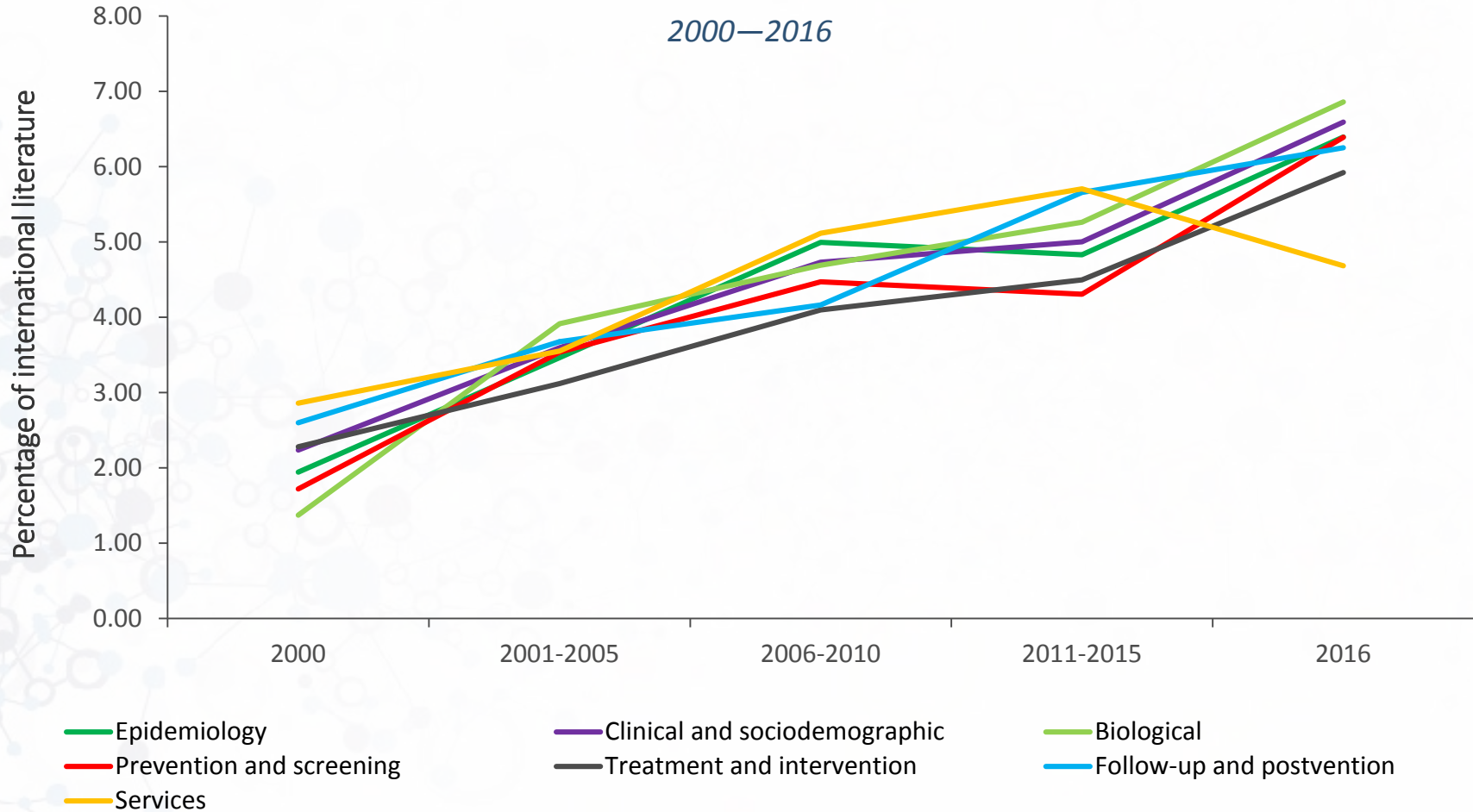



International context of suicide research: PubMed

- Canadian contribution to international has grown:
 - 2.16% of the international publications in 2000
 - 3.52% in 2005
 - 3.95% in 2010
 - 6.12% in 2015



International context: Proportion of international literature on suicide from Canada, by theme





**LITERATURE REVIEW:
SUICIDE AND SUICIDE PREVENTION
RESEARCH FROM 2000—2017**

Methodology

- Inclusion/exclusion criteria
- Constitution of reference library
- Clean-up of library
- Assessment of articles
- Limitations linked to methodology



Methodology: Inclusion/exclusion criteria

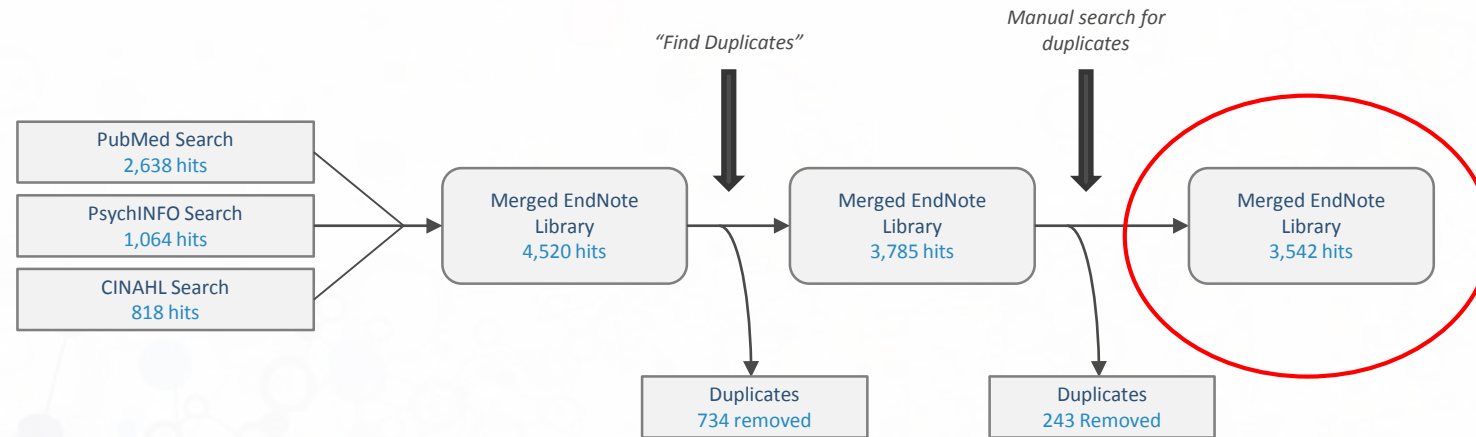
Inclusion criteria

- Systematic reviews or meta-analyses that addressed suicide or suicide-related outcomes
 - Suicide-related outcomes: suicidal ideation, suicide attempts, self-harm, self-injury, or deliberate self-harm
- Articles published in 2000 onward
- Articles written in English or in French

Exclusion criteria

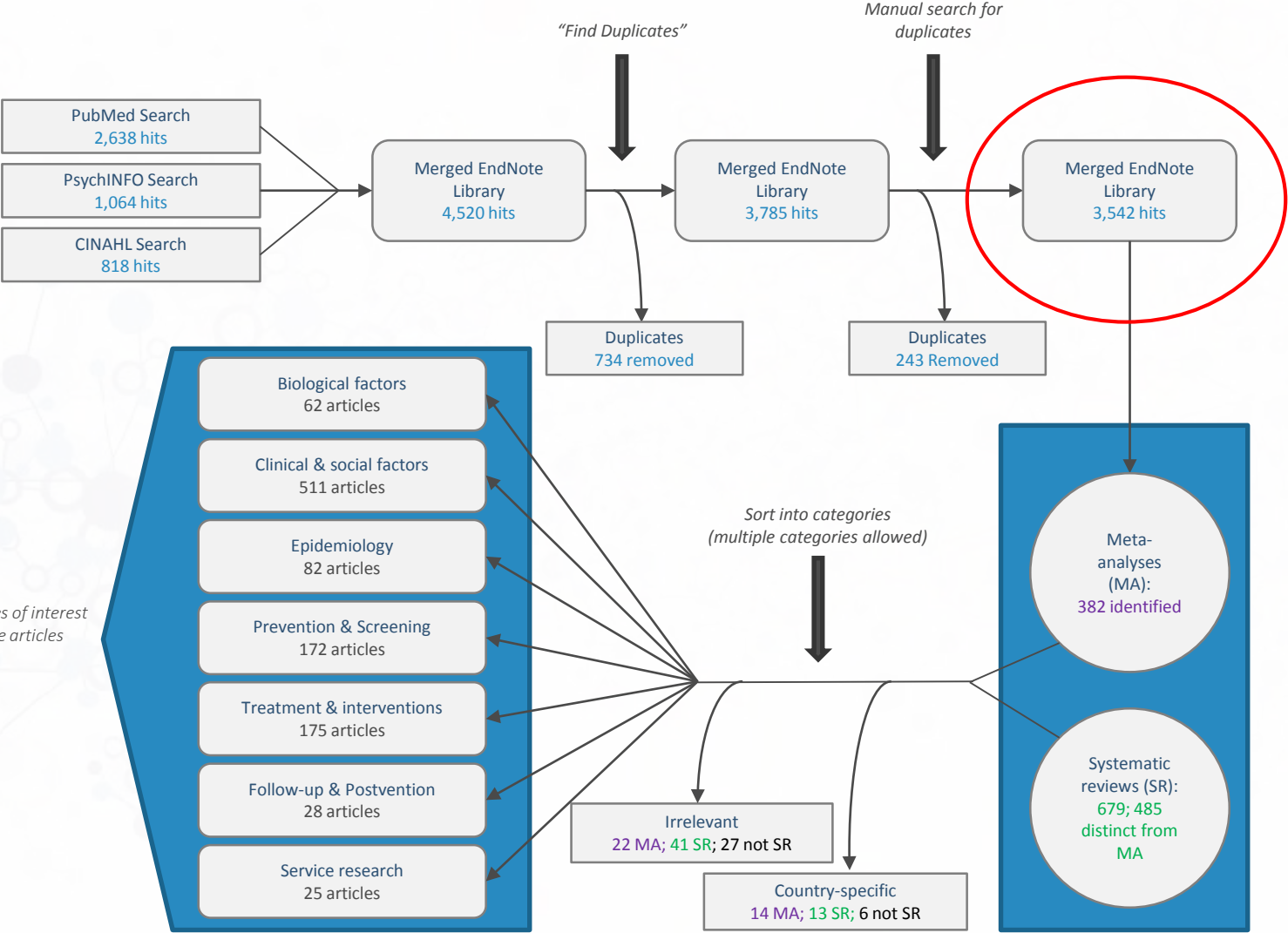
- Publication dates up to and including 1999
- Language of publication other than English or French
- Homicide-suicide (unless suicide was addressed as an independent outcome)
- Medically-assisted dying (or physician-assisted suicide or euthanasia)
- Non-suicidal self-injury
- Mental illnesses not directly related to suicidal behaviour.

Methodology: Constitution of reference library



- Literature search yielded an extremely high number of hits due to large scope of project
- Decisions to move forward:
 - Focus on only systematic reviews and meta-analyses
 - Exclusion of country-specific data
 - Conduct as a scoping review: less emphasis on specific findings, more emphasis on where the bulk of the literature is

Methodology: Constitution of reference library



Methodology: Further clean-up of library

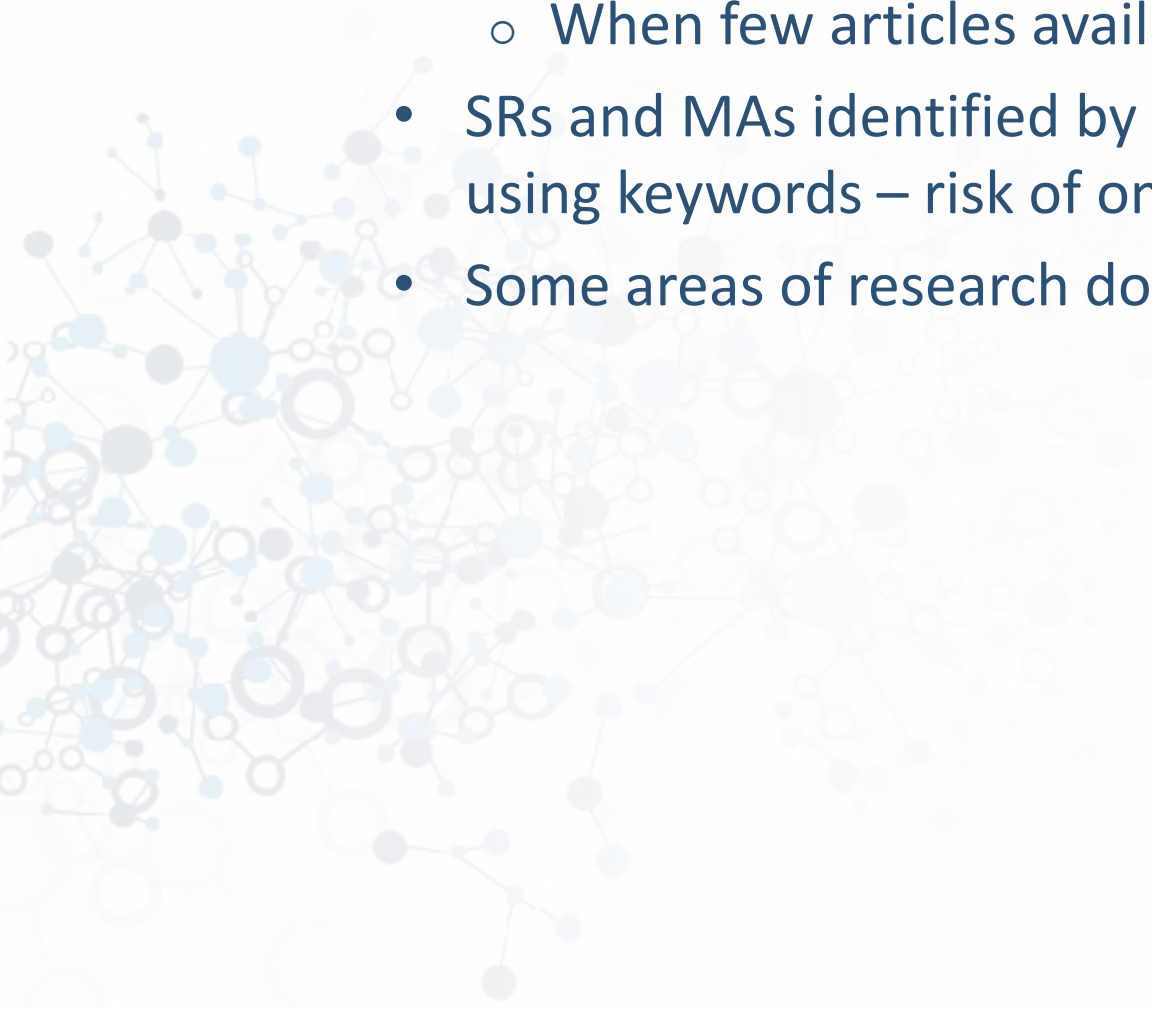
- Article titles grouped into relevant themes then analyzed individually
- Exclusions due to:
 - Lack of relevance or specific focus on a non-NA population
 - Lack of clear methodology (not a systematic review, demoted from 4-5 star system to a single star)
- Resort to more appropriate category
- Canadian authorship and content of articles was reported
 - “Authorship” : author (s) of the review had Canadian affiliation
 - “Content”: article overtly referred to Canadian data
- Main findings: compendium of data reported by authors of the meta-analyses (and sometimes SRs)
- Recommendations: authors’ recommendations as to orientation of future research activities or changes to the way in which we approach suicide and suicidal behaviour

Methodology: Limitations of the literature review

- Inclusion of only articles that synthesize original research in systematic way (meta-analyses and systematic review)
- No expert reviews, no primary publications
- Consensus data, but bias against certain subject areas
- Bias toward quantitative research in scientific journals
 - Used complementary databases
 - Several included studies used qualitative approaches and specifically mentioned the inclusion of grey literature

Methodology: Limitations of the literature review

- Major findings and recommendations:
 - For most sections, drawn from MAs only
 - When few articles available, drawn from MAs and SRs
- SRs and MAs identified by querying library of over 3,500 articles using keywords – risk of omission keywords not used
- Some areas of research do not produce SRs and Mas



Methodology: Limitations of the literature review

- Canadian data identified based on author reports in the full-text
 - Cases where country of origin of primary studies not reported
 - important Canadian data was included in some of the systematic reviews and meta-analyses but were not formally identified as Canadian in origin.
- Canadian authorship: authors of SRs and MAs not necessarily the drivers of original research in the field described





RESULTS OF LITERATURE SEARCH

Results: Summary of risk factors

Male (S)

Female (SB)

Adolescent

History of SB

Family history of psychiatric disorder/suicide

Exposure to violence

- Bullying
- Child abuse

Season – spring/summer

Alcohol/drug use

People receiving inpatient care

Incarceration

Internet and media information

- Exposure to sensationalized celebrity suicide

Comorbid disorders

Psychiatric disorders

- Affective disorders (depression)
- Substance use disorders
- Psychotic disorders
- Personality disorders (borderline personality disorder)
- Anorexia nervosa
- Post-traumatic stress disorder
- Bipolar (children and youth)
- Attention-deficit disorder (children and youth)
- Conduct disorder (children and youth)

Other brain disorders

- Traumatic brain disorder
- Intellectual disabilities
- Autism spectrum disorders
- Multiple sclerosis
- Epilepsy
- Cognitive deficit or decline (elderly)

Results: Summary of risk factors

Somatic conditions

- Underweight
- Physical pain (any type) (SI/SB)
- Previous abortion (SB)
- HIV+ (SI and SH)

Minority groups

- Country of origin of immigrants
- Lesbian, gay, bisexual
- Indigenous especially youth

Occupation

- Physician especially female
- Police, first-responders

Socio-economic situation

- Marital status – young, unmarried (SB)
- Socio-economic insecurity
- Unemployment
- Lower education
- Family structure
- Maternal emotional unavailability
- Separated or divorced

Personality and psychological traits

- Hopelessness
- Impulsivity
- Neuroticism
- Anxiety

Other social factors

- Loneliness
- Recent life events

Results: Summary of protective factors

Internet and media information

Somatic conditions

- Overweight

Minority groups

- Country of origin of immigrants

Socio-economic situation

- Loving parent-child relationships

Other social factors

- Having reasons for living
- Social connectedness
- Sense of belonging
- Religion

Treatment

- SSRIs
- Ketamine
- Lithium for mood disorders
- Dialectical-behavioural therapy (DBT)
- Internet-based CBT in depression
- Follow-up interventions
- Active contact and follow-up

Results: Recommendations for future research

- Produce more data:
 - To better understand mechanisms leading to suicidal behavior
 - To support appropriate treatment and follow-up of youth, ethnic/cultural minorities, sexual minorities, and the elderly
 - To better understand subgroups that are more vulnerable to suicide and SB should be better studied
- Prediction of suicide risk remains elusive
 - Further characterize differences in subpopulations of individuals with high suicide risk (e.g. schizophrenia vs. major depression)
 - Follow-up on biological and clinical factors that have been identified and assessed for predictive value

Results: Recommendations for future research

- Prevention and intervention trials: promising findings, but often inconclusive due to methodologic inconsistencies or inadequate reporting of trial information
- Adequately powered, longitudinal studies incorporating bio- psychosocial variables are required and should be conducted over longer periods of time
- Harmonize methodology across studies, regardless of research theme

- Improve comparisons and conclusions
- Improve likelihood of inclusion in SRs and MAs
- Facilitate policy changes and public health initiatives with strong evidence

Acknowledgements

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Questions? Comments?





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Next Suicide Prevention Webinar



Date: **June 10, 2-3pm EST:** How can we help decrease physician burnout and support professional practice?
Strategies to improve physician engagement, wellness, and excellence.

To re-watch or share this webinar visit:

<https://www.mentalhealthcommission.ca/English/initiatives/11885/suicide-prevention-webinar-series-archive>



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Thank you

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