Postpartum psychiatric hospital admissions: A population-based study from British Columbia

Catriona Hippman[1, 2, 3, 4], Paramdeep Kaur[1], Deirdre Ryan[1,3], Gillian Hanley[1, 4, 5]

[1]University of British Columbia, Vancouver, BC, Canada; [2]University of Calgary, Calgary, AB, Canada; [3]BC Reproductive Mental Health Program, BC Women's Hospital, Vancouver, BC, Canada; [4]Women's Health Research Institute, Vancouver, BC, Canada; [5]Vancouver Coastal Health Research Institute, Vancouver, BC, Canada
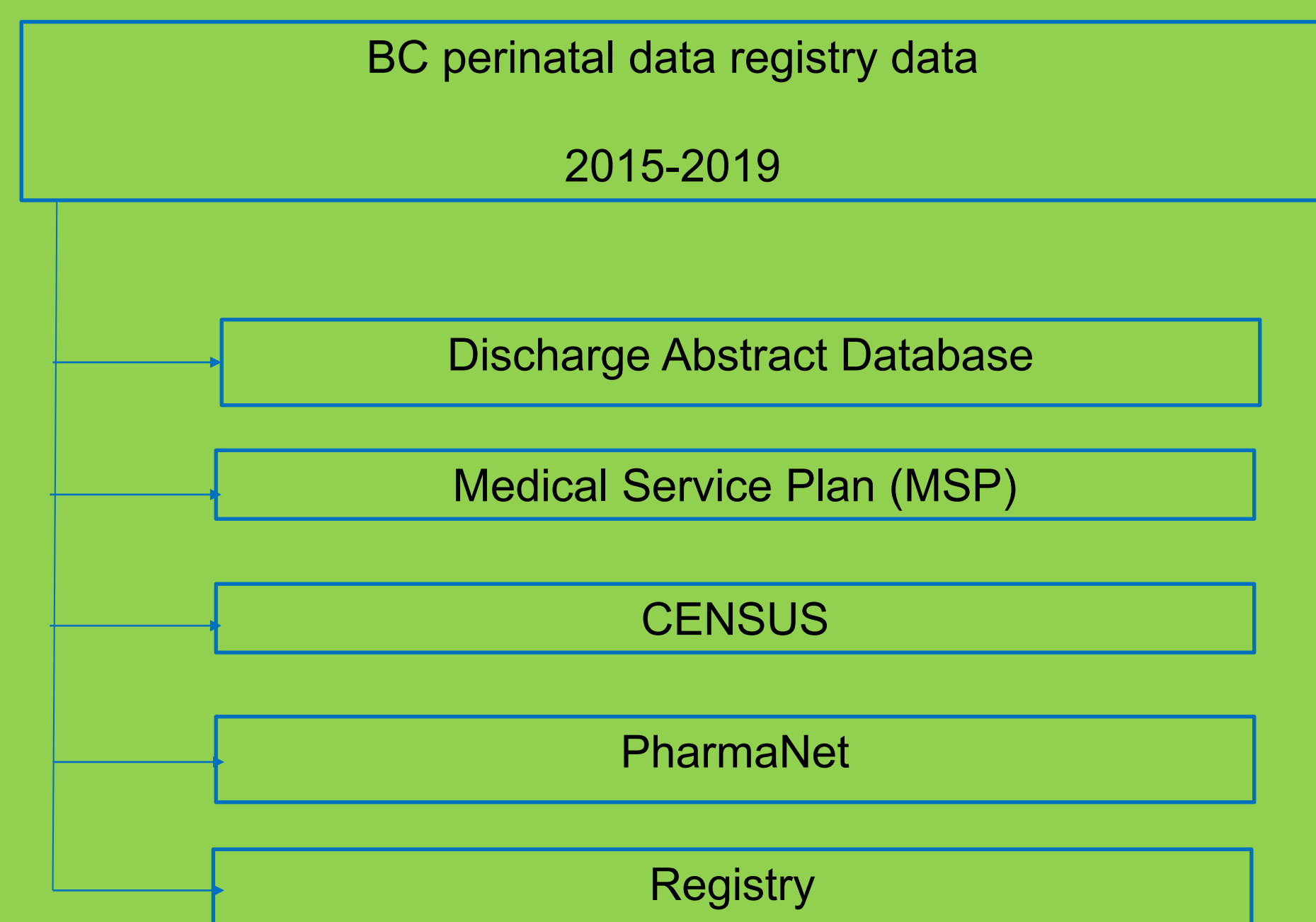
Clinical Context

- Currently, postpartum people in Canada requiring inpatient care for psychiatric illness will be separated from their babies for hospital admissions.
- We know from clinical experience and research in the UK (Griffiths et al., 2019) that this separation is traumatic for parents, and detrimental to parent-infant bonding.
- Past research has found rates of postpartum psychiatric hospital admissions of:
  - 1.03 / 1,000 births – Denmark, Munk-Olsen et al., 2006
  - 8.00 / 1,000 births – Australia, Betts et al., 2020

Research Question

What is the current landscape with respect to care for acute postpartum psychiatric illness in Canada?

1. What is the **rate** of hospitalization for acute postpartum psychiatric illness in the first year postpartum?
2. What are **characteristics** of these hospitalizations?
3. What are **predictors** of these hospitalizations?

Methods: Retrospective, population-based study

BC perinatal data registry data
2015-2019

- Discharge Abstract Database
- Medical Service Plan (MSP)
- CENSUS
- PharmaNet
- Registry

Data were analyzed using descriptive statistics and logistic regression modelling.

Over a 5-year period in BC, there was a postpartum psychiatric hospitalization rate of 4.3/1000 deliveries.

Risk factors for postpartum psychiatric hospital admissions:

1. Younger age
2. Multiparity
3. Short first stage of labor
4. Low newborn APGAR score
5. Pre-term baby admitted to the NICU
6. Psychiatric history

Results

Rate

- Total number of deliveries = **218,226**
- After data cleaning = **189,530**
- Number of postpartum psychiatric hospital admissions = **812**
- Rate of postpartum psychiatric hospital admission: 0.43% of births; 4.3 per 1000 births

Characteristics

- Of those admitted for psychiatric illness within 1 year following delivery, 70% had a history of psychiatric illness 2 years before conception or during pregnancy, while 30% did not.

Inpatient admission by diagnosis in postpartum period	All postpartum admissions n (%)	Number of birthing people readmitted to hospital in postpartum period n (%)	Length of hospital stay (days) Median (Min – Max)	Median timing of hospital stays relative to delivery (days) Median (Min – Max)
All psychiatric diagnoses	812 (100)		3 (0-111)	159 (1-364)
Anxiety	15 (1.8)	<5 (6.7)	1 (0-15)	239 (8-343)
PTSD	19 (2.3)	6 (31.6)	3 (0-21)	197 (13-339)
OCD	<5 (0.4)	<5 (33.3)	6 (0-37)	235 (36-338)
GAD	21 (2.6)	<5 (9.5)	3 (0-24)	219 (3-341)
Panic disorder	73 (9.0)	11 (15.1)	2 (0-30)	166 (2-360)
Depression	233 (28.7)	34 (14.6)	3 (0-63)	143 (1-362)
Personality disorder (excluding borderline)	16 (2.0)	<5 (18.7)	2 (0-44)	201 (19-335)
Borderline personality disorder	41 (5.0)	7 (17.1)	3 (0-20)	170 (9-358)
Bipolar disorder	62 (7.6)	14 (22.6)	10.5 (0-41)	118 (4-358)
Psychosis	47 (5.8)	<5 (10.6)	9 (0-62)	111 (6-346)
Schizophrenia	21 (2.6)	6 (28.6)	15 (0-111)	127 (6-347)
Substance-Related Disorders	234 (28.8)	66 (28.2)	3 (0-108)	168.5 (1-364)
Other Disorders	27 (3.3)	<5 (11.1)	4 (0-26)	167 (6-355)

Predictors

	Adjusted odds ratio (95% CI)
Maternal age (years)	
<20	**4.93 (3.54-6.87)**
20-24	**2.45 (1.91-3.14)**
25-29	**1.82 (1.52-2.19)**
30-39	Ref
≥ 40	1.10 (0.76-1.61)
Parity	
Multiparous	**1.39 (1.18-1.64)**
Primiparous	Ref

	Adjusted odds ratio (95% CI)
Duration of first stage of labour	
Q1	**1.53 (1.10-2.12)**
Q2	1.19 (0.85-1.68)
Q3	1.22 (0.87-1.71)
Q4	1.28 (0.92-1.79)
Q5	Ref
Apgar score <7 at 5 minutes	**1.52 (1.11-2.09)**
Pre-term babies admitted to NICU	**1.62 (1.22-2.15)**

	Adjusted odds ratio (95% CI)
Smoked during pregnancy	**1.76 (1.42-2.17)**
Psychiatric hospital admission – 2 years preconception	**2.05 (1.51-2.78)**
Psychiatric hospital admission – during pregnancy	**4.27 (2.75-6.63)**
Psychiatric medication use during pregnancy	
Antidepressant use	**1.55 (1.18-2.02)**
Antipsychotic use	**2.09 (1.50-2.91)**
Anxiolytic use	**2.22 (1.69-2.92)**

Conclusions

Risk factors identified in this analysis could support clinicians to identify those at high risk of acute postpartum psychiatric illness, which could support early intervention and avoid the need for hospitalization.

Acknowledgements