Comparative analysis of socio-demographic factors for prenatal registrants who participate in Best Beginnings program (BBP) versus non-participants

Keturah Kalio

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Background

Background

- The Maternal and Child Health (MCH) field is a critical aspect of PH that recognizes that a **child's health is closely linked to the health** and well-being **of their mother** and that **supporting vulnerable pregnant women is essential** for ensuring positive outcomes for both mother and child.

- Vulnerability during pregnancy and perinatal period significantly contributes to adverse maternal, and child health outcomes.

- Vulnerability factors may be physical, psychological/cognitive, socio-economic.

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Background

- In the Enhanced Family Visitation **(EFVP)** and **BBP**, **public health practitioners work with clients** to **prevent or reduce adverse perinatal** and **early childhood outcomes** associated with psychosocial, environmental, and lifestyle risk factors.

- **Providing support and resources** to vulnerable pregnant women promotes **positive maternal** and **child health** outcomes.

Goal for project

To **improve the accessibility to the EFVP and BBP** by understanding **factors that impact participation** or **receipt of services** by mothers/parents from **different demographic backgrounds**.

This project focused on **women who prenatally registered** with Fraser Health Public Health and **qualified for follow-up**.

The results from the analysis will provide information that can help the Best Beginnings program determine if **certain demographic groups** are **not accepting** or **completing services**, so targeted interventions may be needed for these groups.
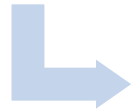
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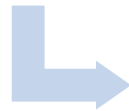# Methodology

Technical strategies and resources

Reviewed the current BBP and NFP Clinical Study protocols and data reports as a guide
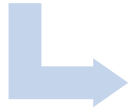
Identified appropriate variables for analysis in consultation with Epi and Program manager.

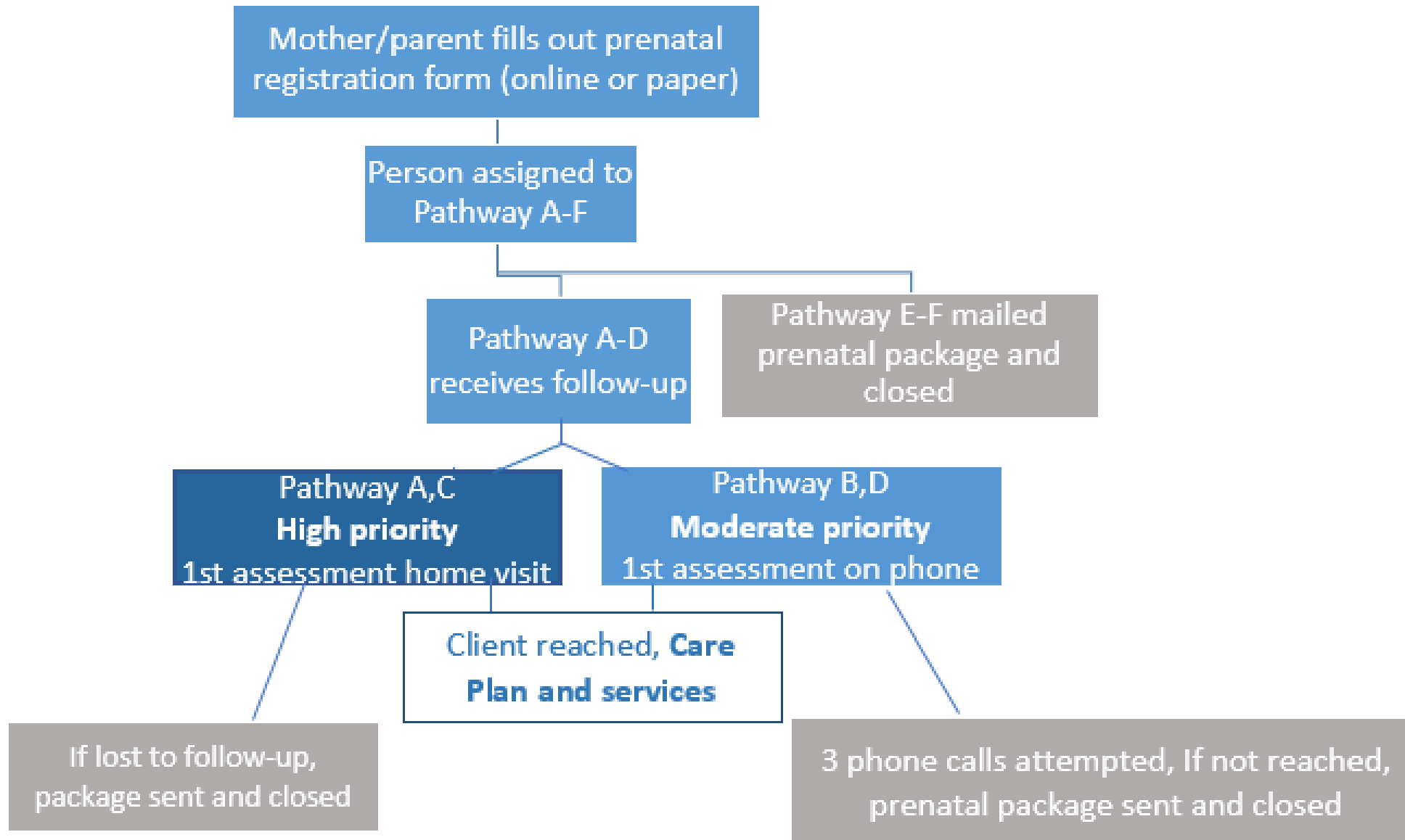Generated a data extraction and analysis plan.

Obtained administrative data out of Paris using SQL queries.

Used R statistical software to organize and de-duplicate the data and to conduct demographic analysis.

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Prenatal registration process for services

Prenatal registration pathways

PATHWAYS	DESCRIPTION
A	Selected populations (1+ items): redacted
B	Possible depression
C	Vulnerable (2+ items): redacted
D	Smoking
E	Second hand smoke
F	No follow up

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Review of the Best Beginnings protocol to identify process and population

- Focused on pregnant persons that had completed prenatal registration and qualified for services (Pathway A-D)
- Two study populations:
  - *Those in Pathway A-D who **did not receive services**-* Had only a prenatal registration assessment.
  - *Those in Pathway A-D who **received services**-* Had a prenatal registration and a care plan assessment.
- Compared these two populations for
  - Eligibility pathways and age
  - Sociodemographic factors
  - Pregnancy related factors
  - Health and well-being factors
  - Economic factors

Identification of variables for comparison

Variables used

- Age

- Aboriginal status

- Need interpreter

- First time parent

- Completed high school

- Postal Code and City

- Income difficulty and assistance

- Social support

- Tobacco use

- Depression and Little Interest in activities

Excluded due to incomplete entries

Race information

Ethnicity

Religion/Cultural background

Immigration/Residence status

Nationality/Citizenship

Living in stable housing

Obtain administrative data out of Paris

- Through exploration of the front end of Paris and the backend Paris SQL developer,
  - Identified Paris tables containing relevant variables.
  - Conducted joins to extract and combine data from different tables.
  - Defined appropriate date fields and syntax for pulling prenatal registration and care plan assessment information
  - Extracted data from Paris with assessment dates for FY 2022/23 (1st April 2022 – 31st March 2023)

- Collaborated with Epidemiologist and Public Health Informatics team to check SQL query.

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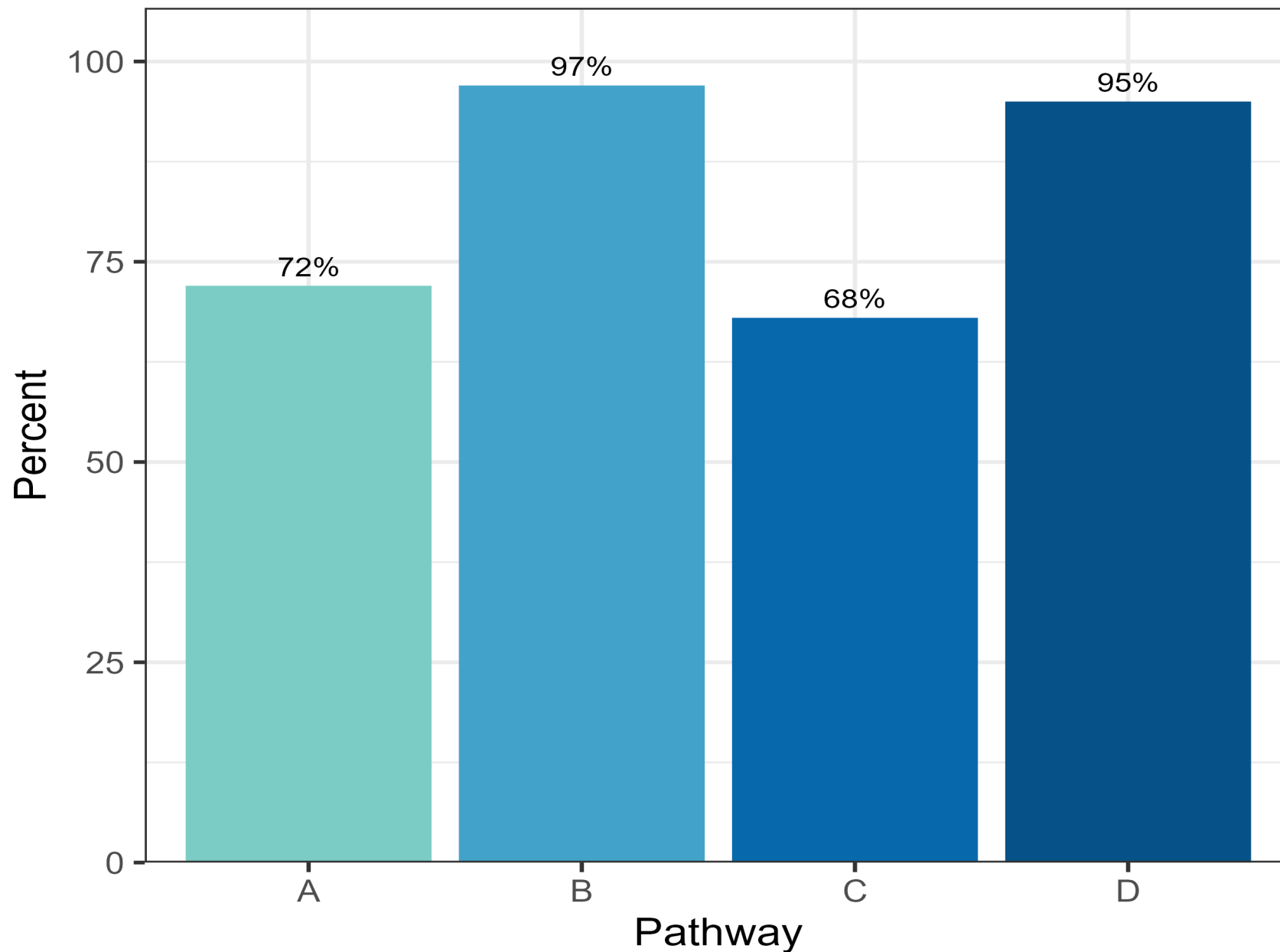# Use R statistical software for data organization and demographic comparison

- Data extracted contained many duplicates due to the linking of data tables.

- De-duplicated tables were cleaned and restructured to ensure proper analysis using various R functions.

- Age of the client from the date of assessment was created and calculated.

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Findings

Table 1: Demographic comparison of persons who qualify for prenatal services (Pathway A-D) that don't receive services compared to those who do for FY 2022/23

Vunerability	Response	G1: Received services		G2: Did not receive services		Rate Ratio G1/G2
		Count	Rate	Count	Rate	
First time parent	Yes	Redacted	49.6	Redacted	55.0	0.90
Little interest in activities	Yes		50.6		53.0	0.96
Depressed	Yes		54.8		44.3	1.24
Aboriginal	Yes		16.1		12.6	1.28
Need Interpeter	Yes		13.4		8.9	1.50
Smoking	Yes		9.4		5.2	1.79
Income assistance	Yes		34.7		15.6	2.23
Completed HS	No		19.4		8.6	2.26
Income difficulty	Yes		54.3		23.2	2.34
Someone to talk to	No		15.1		6.3	2.39

Proportion of clients (Pathway A-D) not receiving services for FY 2022/23

Proportion of clients not receiving services (Pathway A-D) for each vulnerability FY 2022/23

Vulnerability	Percent
First time parent	82%
Little interest in activities	81%
Depressed	77%
Aboriginal	76%
Need Interpeter	73%
Smoking	70%
Income assistance	65%
Income difficulty	64%
Did not complete HS	64%
Did not have someone to talk to	63%
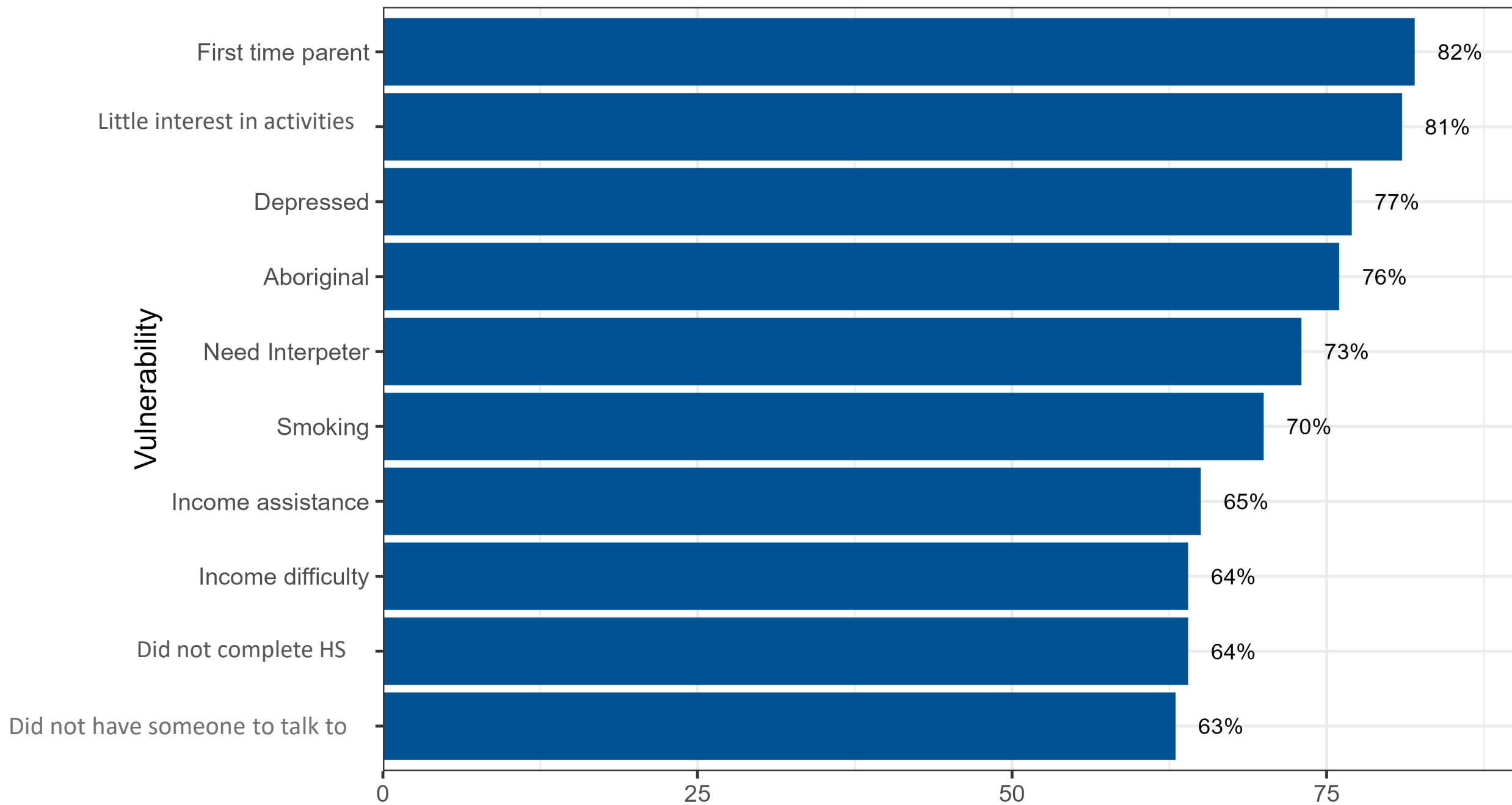
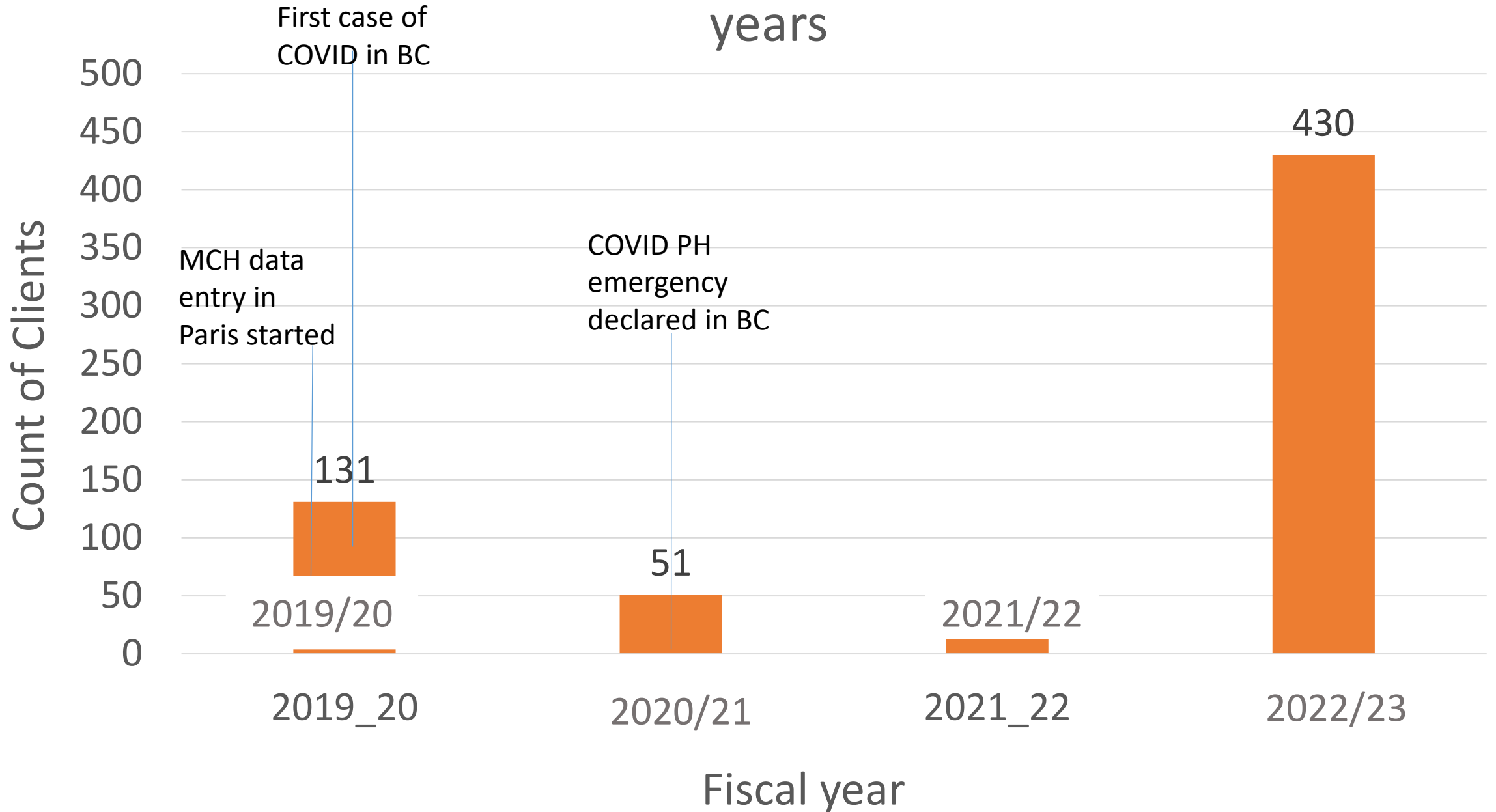# Population of clients (Pathway A-D) not receiving services per CHSA for FY 2022/23
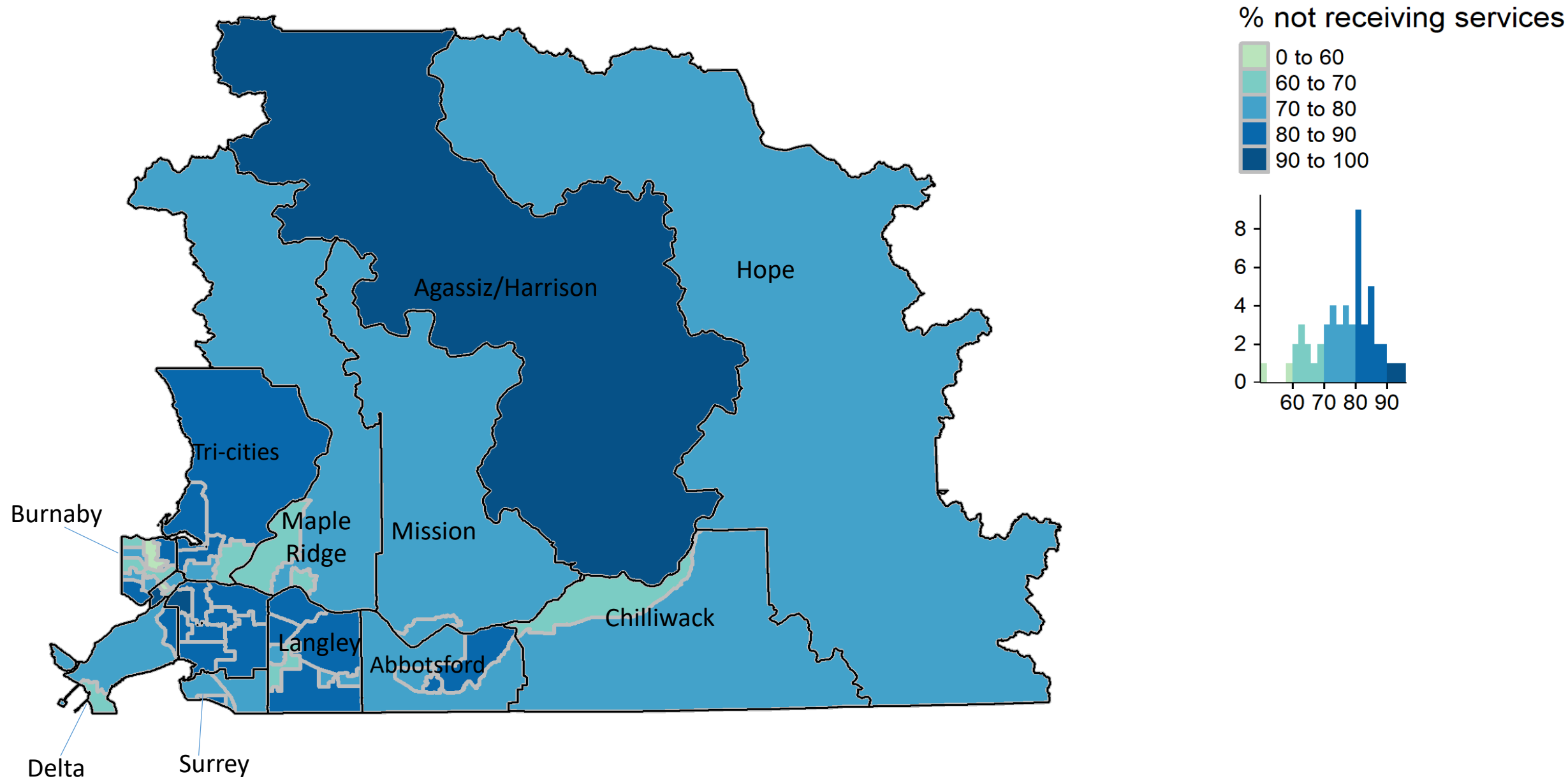
Proportion of clients (Pathway A-D) not receiving services by Age group for FY 2022/23
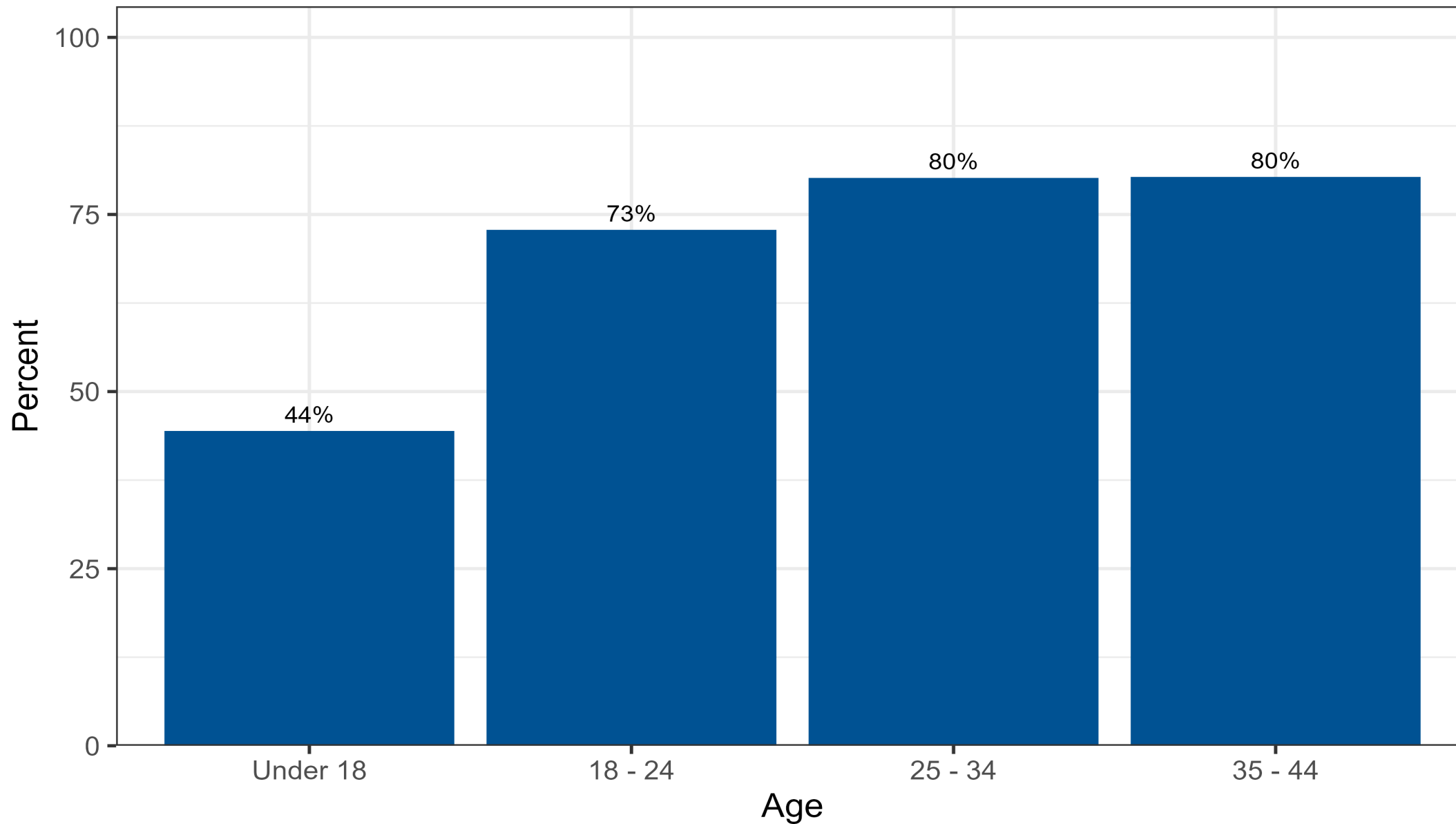
Trend of clients (Pathway A-D) receiving services over the years

Summary of comparative results

For prenatal registrants that qualified for BB services:

- Significant difference in proportion for those who **Received BB** services and those that **Did not Receive BB** across most sociodemographic variables assessed.

- Almost double or higher receipt of services for those who smoke, are on income assistance, did not complete high school, have income difficulties, or don't have someone to talk to.

- Areas with lower service uptake that may need improvement: first-time parent, little interest in doing things, depressed, and Aboriginal.

- LHA's with high proportion of clients not receiving care services: Agassiz/Harrison, Surrey and Langley.

Literature Review Procedure

- Initially the Literature review looked at participation in Public Health nursing Programs but yielding few articles

- Literature review was broadened to look at participation/attendance of pregnant mothers at prenatal care services.

- 8 articles reviewed

Literature review question: Social determinants of health in relation to prenatal care utilization among pregnant individuals.

Population: Mothers(pregnant women/individuals, post-partum women/individuals)

Intervention/Exposure: Social Determinants of Health

Outcome: Prenatal Care

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Literature Review Findings

Focused on Canadian context, with the following themes consistent across all articles:

1. Barriers: Situational/geographic barriers, Psychosocial barriers (Worries that the baby would be apprehended by child protection services), attitudinal and pregnancy related barriers, individual and personal barriers.

2. Facilitators of prenatal care: Transportation assistance, child care, convenient clinic hours, incentives, social support from friends and family

3. Motivators: Gaining knowledge, skills, and information on nutrition, lifestyles, community supports, social interaction with women during clinical visits

Recommendations

- Locating prenatal care services closer to where women live.

- Providing transportation assistance.

- Promoting public awareness about the importance of prenatal care and prenatal registration.

- The lit search suggested that a comprehensive approach involving healthcare providers, and other partners to address the broader social issues such as low income, homelessness, and substance use, can help break down barriers to accessing prenatal care.
  - The Mat Child programs of BB/EFVP and PH programs of Harm reduction and Health Equity work to improve these areas

- Further explore regional or CHSA differences in areas with a higher proportion of women not receiving services.

- Investigate reasons for not receiving services by further chart review of nurse's comments

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Thank you!

Any Questions and Discussions

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