SASKATOON HIV PROGRAM EVALUATION

FINAL REPORT

2024

Land Acknowledgment

We acknowledge the territories in which this work reaches, including Treaties 2, 4, 5, 6, 8, and 10 – the traditional territories of the Cree and Saulteaux, Assiniboine peoples and the Homeland of the Métis.

This program evaluation was guided by the World Health Organization (WHO, 2013) *Guide to Conducting Program Reviews for the Health Sector Response to HIV/AIDS*.

Disclosure Statement: Funding for this evaluation was provided by ViiV Healthcare as a community grant. These grants do not involve oversight or inclusion of ViiV representatives and are meant as a means of supporting projects aiming to improve clinical outcomes for people living with HIV. As such, the financial support for this evaluation comes with only a one-page report detailing what activities were undertaken and the milestones for project completion. There were no outcomes required, anticipated, or expected by ViiV other than that the evaluation be completed in the time and with the funds allotted.

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EXECUTIVE SUMMARY

HIV transmission rates in Saskatchewan (SK) are the highest in Canada and continue to increase. Challenges linked to substance use, mental health and addiction, trauma, racism, violence, housing unaffordability, transportation access, poverty, and marginality contribute to the increased complexity of care and transmission rates, co-morbidities, co-infections, and early death among those living with or at risk for HIV infection. The majority of HIV/AIDS cases in SK are reported and cared for in Saskatoon. As such, providers identified a need to evaluate Saskatoon's HIV/AIDS care delivery program to identify better ways to support the patient population and decrease transmission rates.

Launched in November 2022 by a stakeholder group of care providers, this review assessed HIV care services available in Saskatoon to identify ways to improve service delivery and clinical outcomes. The four-phase evaluation process was informed and iteratively carried out according to stakeholder input, data collection, and findings generated from previous evaluative phases. A plenary session was held with stakeholders in the fall of 2023 to validate interim findings (Table 1) and identify the next steps for addressing gaps and barriers across each marker along the HIV cascade of care.

In November 2023, stakeholders identified the need for a strategic awareness plan to advance the program evaluation findings (See Appendix 2.0 and 6.0). As such, a plan and media kit were developed, accompanying this report. Provider tradeshows and process mapping sessions were held, where provider agencies presented organizational structures, programming, and care-intake processes. This information informed a comprehensive map of the HIV care ecosystem in Saskatoon (Figure 7). This map helped to articulate specific gaps further and missed opportunities for coordinated care across sites and services. A second map detailing the ideal process for HIV care was co-developed with providers and validated by stakeholders to support the continuous sustainable improvement towards an integrated care pathway across services and care sites (Figure 8)and informed the final set of improvement priorities for HIV care in Saskatoon (Table 2).

This report outlines the evaluation process, synthesizes and summarizes the results of data collection and plenary sessions, and presents recommended actions. It includes the current and proposed clinical and service care pathways offered by provider organizations in Saskatoon. The full, comprehensive report, action plan, and communication plan materials will be publicly available through the Saskatchewan Infectious Disease Care Network website (www.sidcn.ca).

4 AREAS FOR IMPROVEMENT

- Strategy & Infrastructure
- Care Design & Delivery
- Data, Measurement & Reporting
- People & Capacity

Table 1: Areas for Improvement

6 IMPROVEMENT PRIORITIES

1. Provincial Coordination & Accountability
2. Centralized and integrated Saskatoon HIV services (i.e. mechanisms to streamline coordinated HIV care pathway)
3. Relationship-building across agencies for service integration, trust building and continuity throughout the care continuum across Saskatoon/SK
4. Multi-agency consent process that enables and ensures the effective linkage to care and reduce/eliminate lost-to-follow-up
5. Process for effective and responsive Case Management/Outreach
6. Outcome driven & evidence informed decision making

Table 2: Improvement Priorities

TABLE OF CONTENTS

EXECUTIVE SUMMARY 2
TABLE OF CONTENTS 3
OVERVIEW: REVIEW RESULTS OF HIV/AIDS CARE IN SASKATOON, SK 4
RECOMMENDATIONS 5
CURRENT STATE OF HIV IN SASKATOON, SK 7
HIV PROGRAM REVIEW – EVALUATION PHASES 10
PROCESS AND METHODS 11
RESULTS & FINDINGS: ALL DATASETS AND PHASES 14
A.HIV PROVIDER PROGRAM DATA 14
B. HIV CARE FRONTLINE PROVIDERS FOCUS GROUP 19
C. SHARING CIRCLES AND INTERVIEWS WITH PEOPLE LIVING WITH HIV 18
D. KEY STAKEHOLDER INTERVIEWS 22
E. TWO-DAY DELIBERATIVE PLENARY SESSIONS WITH STAKEHOLDER GROUPS 20
F. PROCESS MAPPING FOR INTEGRATED HIV CARE PATHWAYS 25
G. CASCADE OF CARE DEFINITIONS REVIEW 27
H. CASE MANAGEMENT 31
I. KEY GAPS 32
J. LIMITATIONS 30
DISCUSSION OF EVALUATIVE QUESTIONS 34
LIMITATIONS & CONCLUSION 39
REFERENCES 41
SUPPLEMENTARY MATERIAL 45

OVERVIEW: REVIEW RESULTS OF HIV/AIDS CARE IN SASKATOON, SK

RESULTS: PROGRAM IMPROVEMENTS

- HIV care in Saskatoon has some notable strengths, notably person-centred care models and dedicated care providers. HIV care provision, however, is limited by a lack of adequate resourcing and a multitude of stopgaps which challenge streamlined, comprehensive care for people living with or at risk for HIV and related co-morbidities.

- There is no current clear or consistent vision or strategic plan to address HIV in SK. Saskatchewan's last HIV strategy ended in 2014, with no updated or renewed strategy.

- There is insufficient and unstable resourcing, which results in inadequate services required to respond to the current demand for HIV care and prevention in Saskatoon.

- All stakeholder groups raised staffing shortages, turnover, burnout, and workload burdens at all evaluation phases. They requested more training, additional support workers and case managers, and better leadership from the health authority and governmental ministries to address the ongoing HIV epidemic in the province.

- Peer-led sharing circles with people living with HIV highlighted the increased need for an improved bedside manner, especially during diagnosis. A common theme of stigma and shame felt across interactions with the health system requires attention and additional provider training.

- Standardizing HIV care cascade definitions and improving data sharing among providers is critical to accurately measuring and evaluating clinical outcomes, patient satisfaction, resource allocation, and gaps and barriers to care.

RESULTS: BARRIERS & LEVERS

- Stakeholder sessions refined and validated the evaluation results through robust discussion and consensus building on prioritized areas. Program and clinical care pathways must be leveraged and integrated to inform demonstrated action.

- Messages of tension, conflict, and mistrust in the HIV care landscape were palpable and notable throughout data collection and plenary sessions. Despite being collegial and productive throughout the evaluation process, discussions brought moments of anger and frustration across and between stakeholder groups.

- Responding to a lack of understanding about other program approaches and resources across organizations, 'trade shows' were held to share knowledge among provider groups across the care cascade to highlight services and processes. This information informed the mapping of the current care processes and the development of an ideal clinical pathway for HIV care in Saskatoon.

RECOMMENDATIONS

Throughout this evaluation, several recommendations for improvement in HIV care for Saskatoon were identified. The project team presented consolidated recommendations below by deploying a series of activities to refine, validate, prioritize, and map the key improvements. Recommendations were validated throughout the evaluation by project stakeholders:

1. Establish a provincial HIV program with sufficient long-term funding and an operational strategy that supports care coordination across community and clinical sites and facilitates cross-sectional collaboration.

2. Strengthen relationships and care coordination to support an integrated HIV program and clinical pathway for Saskatoon. This would include clarifying roles and responsibilities, providing avenues for conflict resolution, and ensuring accountability for inappropriate behaviour/outcomes.

3. Establish clear and mutually agreed-upon definitions for data collection and reporting and ensure that all service providers and agencies use these definitions and reporting metrics to standardize data collection and outcome reporting.

4. Establish policies and protocols for integrating and sharing clinical data. Reporting templates, data metrics, and definitions should be standardized across sites and integrated into a shared data collection site, following secure data-sharing procedures (Towe, Stevens, Fischer, 2019; Olivia and Eller, 2022).

5. Develop a shared opt-out consent process to facilitate effective and timely access to the continuum of care offered by HIV programs and organizations. This includes strengthening relationships and coordination across sites to clarify roles and responsibilities in an integrated HIV clinical pathway. Consider non-linear care models and consenting processes to better facilitate rapid access to care.

6. Develop a shared approach to address key gaps in patient linkage and engagement. This could include supporting more proactive Case Management and Outreach Worker teams and integrating Peer Support Workers to better manage patients "lost to follow-up" and effectively engage and re-engage rapid access to treatment.

7. Conduct rigorous program audits to determine adequate funding allocation that responds to patient loads and the complexity of needs. This process would support evidence-based and transparent criteria for funding decisions, resource sharing, and accountability measures.

8. Provide training and professional development for staff and providers to improve cooperation, culturally competent and trauma-informed care. This could also involve training on procedures and processes to optimize care and transition points for those at risk or living with HIV.

9. Appointment of an individual who is resourced and ultimately responsible for leading and implementing the HIV strategy. This individual must have the authority to make directive decisions and be accountable for improving patient outcomes. This should include examining the critical role of Public Health in HIV prevention and surveillance.

10. Create a position for an HIV Care Coordinator in Saskatoon. This person would be the first point of contact and liaison across care sites, provide central coordination, manage referrals and data metrics, support care coordination, navigation, and (re)engagement in care, and facilitate coordination between Saskatoon providers and monitor provincial outcomes.

11. Support the practical refinement and implementation of a coordinated care pathway to guide and enhance the patient's experience of access to responsive HIV care throughout the care continuum.

CURRENT STATE OF HIV IN SASKATOON, SK

The HIV/AIDS epidemic in Canada has seen a 24.9% increase in new infections nationwide since 2021 (PHAC, 2023), with 1833 new HIV diagnoses in 2022. Saskatchewan (SK) has remained the leading province in HIV diagnosis rates since the onset of the HIV/AIDS epidemic and continues to report an increase in new infections, with a rate of 19.0/100,000 - a rate 5x the national average of 4.7/100,000 (PHAC, 2023). The infection rates in Saskatoon are 6.8x the national diagnosis rate at 26/100,000 (SHA, 2022). HIV rates in SK have successively increased annually, with a 20% increase in new HIV diagnoses in 2020 (PHAC, 2021).

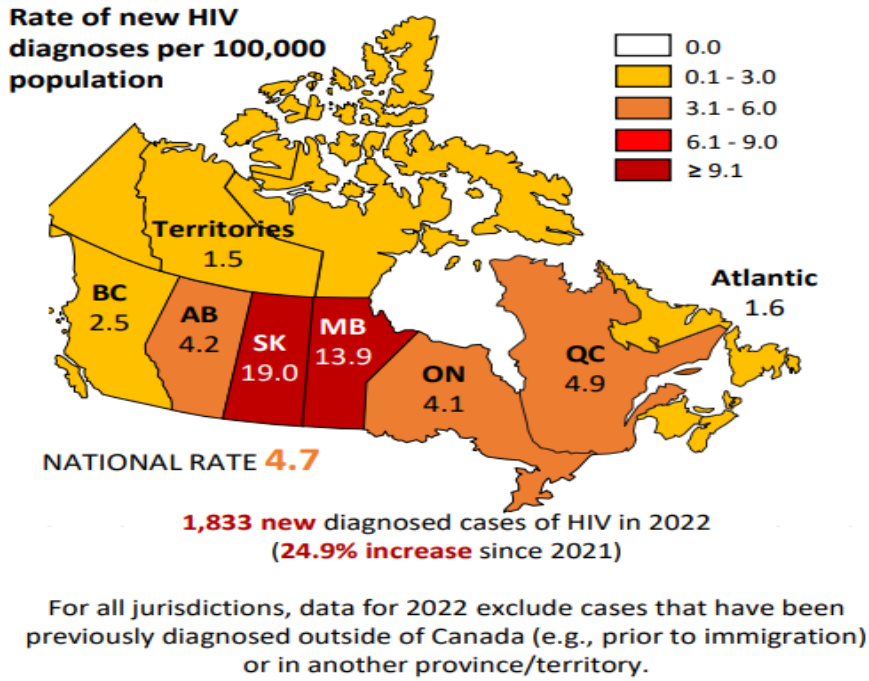
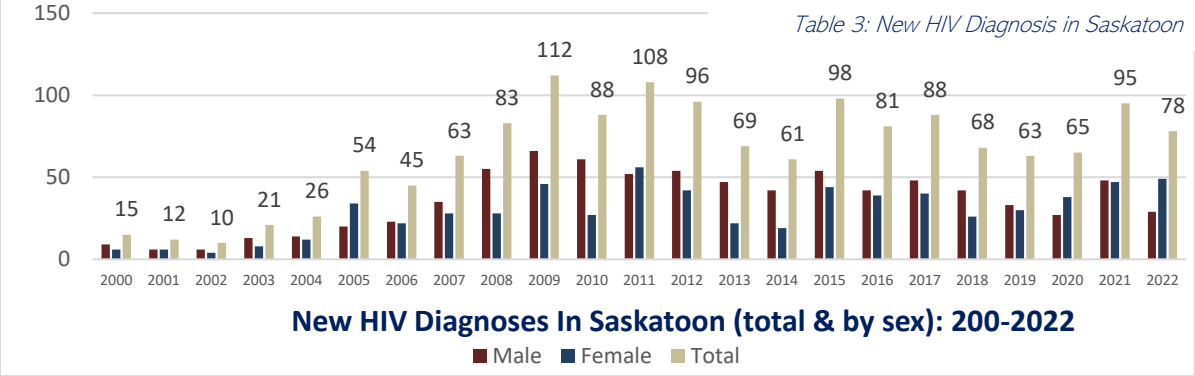


Figure 1: HIV Surveillance Data Canada 2022 Source: PHAC HIV Surveillance Report, 2023

The persistent trend of increasing HIV infections in SK has important policy and program implications, requiring a review of current policies, processes, and care delivery infrastructure. Program reviews are an integral part of care delivery and funding cycles to assess care efficacy, operation, and impact. Conducting regular program evaluations also facilitates opportunities to promote partnerships, offer mutual accountability, identify successes and gaps, implement new interventions or approaches, mobilize resources, and provide harmonization and alignment across all relevant stakeholders for improved outcomes (WHO, 2019).

Table 3: New HIV Diagnosis in Saskatoon



HIV has transitioned from a critical terminal illness requiring specialized care to a lifelong chronic illness relying on the individual and their care team for consistent management. Care teams have broadened to include nurses, primary care physicians, specialists, pharmacists, social workers, outreach support workers, case management, and mental health professionals. The development and utilization of peer-to-peer support networks also provide expertise and insights about living with and preventing the spread of HIV.

Figure 2: HIV Cascade of Care *Source: Tomaszewski, 2016*

HIV care efficacy is measured along the Cascade of Care framework (Figure 2), which is used globally to monitor clinical outcomes and incidences of HIV/AIDS. Three critical phases - diagnosis, treatment, and viral suppression - are held as the global benchmarks established by UNAIDS (2020) as the 95-95-95 strategy, requiring:

- 95% of people living with HIV know their status;
- 95% of people who know their status to receive antiretroviral therapy; and
- 95% of people on treatment to have a suppressed viral load by 2025.

Saskatchewan is currently without an HIV strategy, while transmission rates have continued to rise since the end of the provincial strategy in 2018 (Figure 4). In place of a provincial strategy, the SK HIV Collaborative (https://skhiv.ca/) was formed as a multi-sector committee, assuming the direction of HIV programming and planning in the province. However, the evaluation found a lack of awareness or understanding of the direction and role of the HIV Collaborative in the province. The literature is clear that coordination of care is critical to successfully achieving 95-95-95 targets (Gupta, 2022; Lee, 2021; Hall, 2019). The evaluation also found that despite the lack of strategy and direction, Saskatoon's HIV care programs have implemented several collaborative processes as a legacy of provincial efforts. Gaps and duplication in services were identified, highlighting the need for targeted investment with a focused strategy for HIV/AIDS treatment and prevention within a provincial framework if reducing transmission rates and reaching those at-risk or inactive in care is to be achieved. This report provides an overview of the HIV program review processes and findings. The findings reported herein have been presented to a broad stakeholder group for validation and refinement. Findings from this evaluation are intended to inform strategy development and resource allocation decisions, with full implementation envisioned by April 2025.

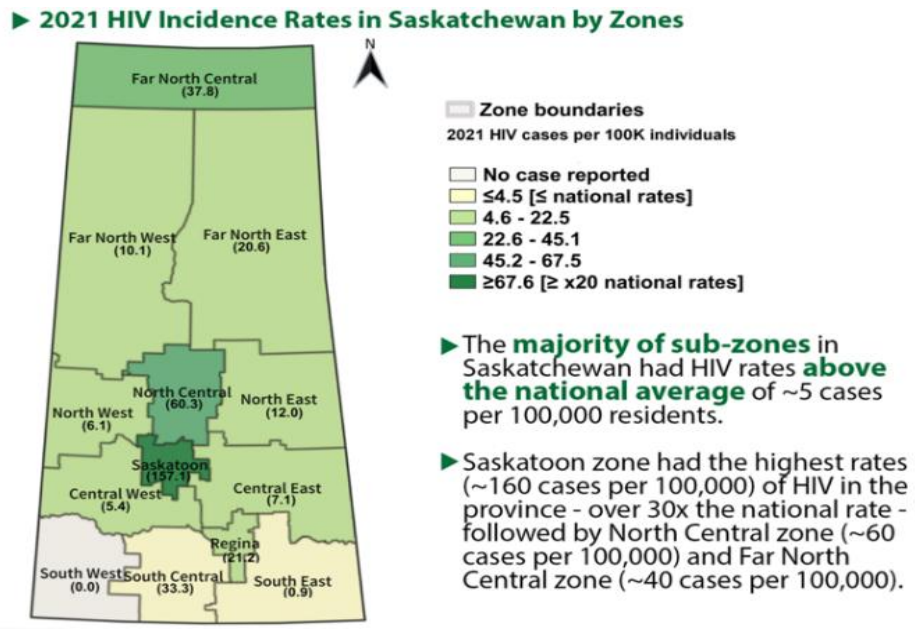


Figure 3: Provincial HIV rates by zone (source: Saskatchewan Ministry of Health, 2021)

Figure 3 above illustrates HIV incident rates per 100,000 by provincial zone. Below (Figure 4), a comparison of provincial HIV incidence rates per 100,000 population overlayed with the reported annual province-wide funding for HIV is demonstrated. Due to the gap in reporting since 2019, targeted resourcing amounts from the Ministry of Health for HIV from 2019 are not known or publicly reported. With HIV infection rates rising, along with co-infections and unmet basic needs among the population, evidence illustrates that those at risk or infected with HIV are becoming sicker while surpassing the available services required to provide adequate or responsive care. A provincial and coordinated approach to adequately resource the care and services necessary to reduce HIV transmission rates is needed.

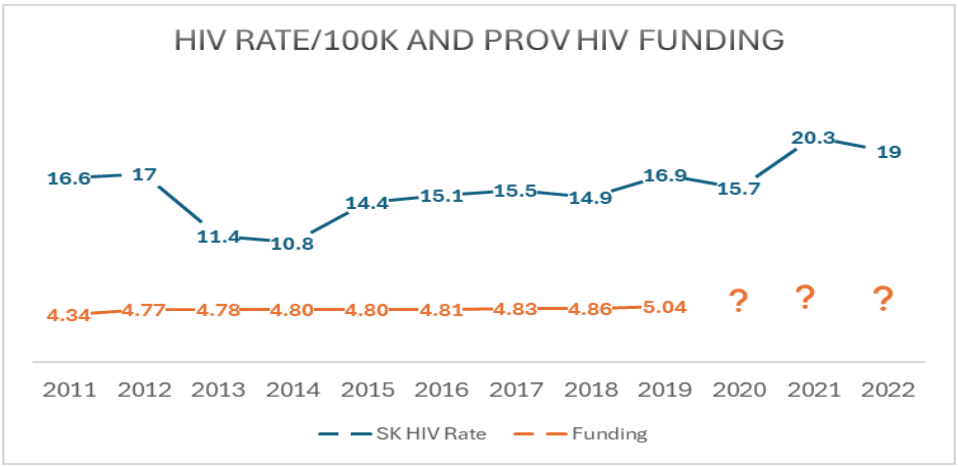
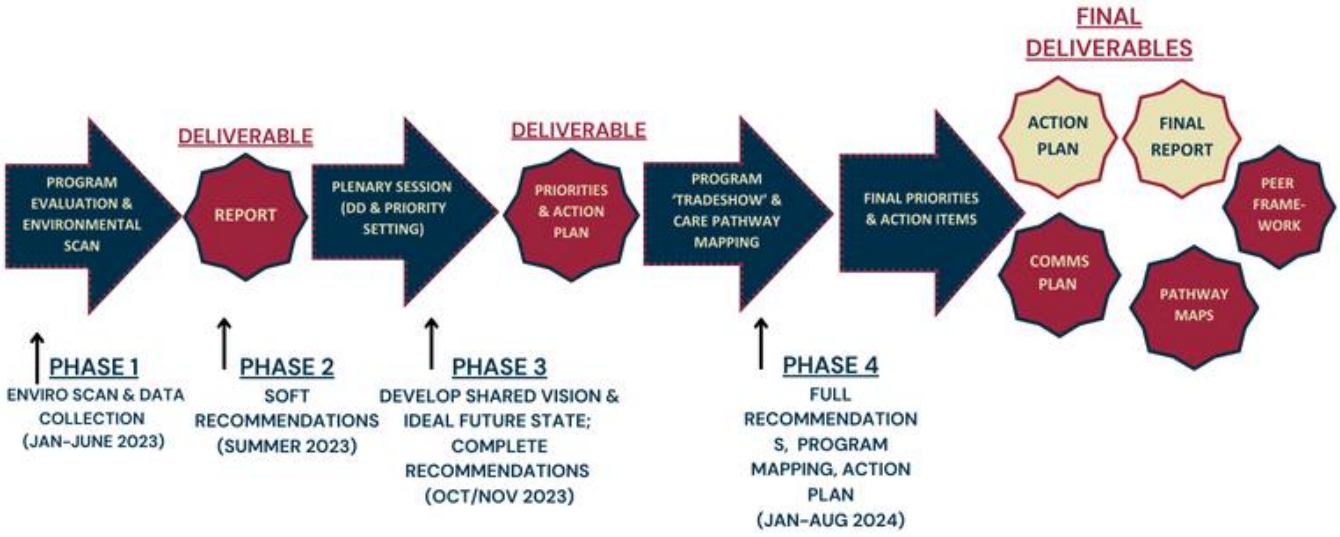


Figure 4: Provincial HIV rates and dedicated funding
Sources: SK HIV Report 2019; SK Rates: PHAC HIV Surveillance reports 2011-2023

HIV PROGRAM REVIEW – EVALUATION PHASES

This HIV program review, launched in November 2022, sought to highlight care gaps and duplications to offer recommendations to enhance HIV care efficacy across Saskatoon, SK. It aimed to provide evidence-based guidance on strengthening the Saskatoon HIV care cascade to achieve the UN 95-95-95 global targets. The review comprised four (4) iterative phases (Figure 5) and was framed using the World Health Organization HIV program review cycle (WHO, 2013) (Figure 6). Data collection (Phase 1) began in January 2023, with preliminary findings presented in an interim report in June 2023 (Phase 2). A plenary session (Phase 3) was held in the fall of 2023, which resulted in a consensus-based action plan and integrated care pathway (Phase 4) co-developed and vetted throughout the evaluation. The data cut for inclusion in the analysis was July 31, 2024.



A participant-informed co-design process facilitated the integration of the evaluative phases while iteratively modifying the activities and deliverables to ensure reliability and relevancy to the knowledge needs of the stakeholder groups. This approach offered logical and practical next steps to support the full implementation of the review recommendations. This review evaluated Saskatoon's HIV service efficacy in improving HIV care cascade outcomes. Necessarily, the review considered the provincial context of the health system components, including the provincial government, Indigenous leadership, health authority representation, program administrators, non-governmental and non-profit community-based organizations, front line, outreach, and provider groups, people living with HIV, support and advocacy groups.

PROCESS AND METHODS

The program review comprised four phases that built on one another. The review team conducted all consultations, data collection, analysis, and report drafting. Preliminary findings and recommendations were presented to the advisory council for validation and accuracy to support finalizing documents and preparations for the next steps of each phase. This iterative process provided clarifications and refinement, continuously engaging stakeholder groups while lending credibility to final recommendations to increase the likelihood of implementing the review recommendations. As an independent review, the recommendations are those of the evaluation team based on the data collected. The data informed the findings and recommendations presented within this report of the evaluative phases in summation.

Program Review Questions

The review considered the impact of current practices in Saskatoon on HIV prevention, prevalence, mortality, and morbidity among infected and at-risk populations. Five critical questions guided the review:

1	*Are the right things being done?*	*e.g., Adequate policies, plans, targets, resources*
2	*Are they being done in the right way?*	*e.g., Appropriate care delivery models, program management, coordination, and quality*
3	*Are they being done on a large enough scale?*	*e.g., Service quantity/ distribution reaching those in need*
4	*Are the right people being reached?*	*e.g., Coverage, access and diversity of services and programs respond to the population*
5	*Is the program making a difference?*	*e.g., Prevalence, morbidity, and mortality rates*

Program Review Team

Expert Consultant	20 yrs exp in healthcare organization and management; incl. HIV and STBBIs	• Conducted literature reviews • Facilitated stakeholder sessions and interviews, • Conducted data collection and analysis, • Prepared iterative findings, • Drafted preliminary recommendations, • Planned, led, and facilitated the plenary sessions, • Facilitated a resulting action plan for the next steps • Authored all reports and approved all materials
Academic Researcher	12 years exp working within HIV/AIDS care & research in SK across ministry, academia, and community	
Research Professional	10 years as research support; within health care evaluation, participatory research, chronic illness	
Communications Specialist	15 years as communications consultant, writer & editor	• Provided communications expertise • Co-developed communications strategy and resource materials
Advisory Council	Leading, managing, & delivering HIV programs and services within Saskatoon.	• Provided access to clinical and program data • Reviewed and informed the evaluation processes • Reviewed findings and gave feedback on reports • Presented program details for care pathway mapping
Peer Support Workers	Lived expertise with HIV and accessing complex HIV care in Saskatoon	• Facilitated sharing circles with people living with HIV • Provided ongoing lived expertise and cultural insight

METHODS

This four-phase review was guided by the World Health Organization's (WHO) *Guide to Conducting Program Reviews for the Health Sector Response to HIV/AIDS* (WHO, 2013) (Figure 6). Accordingly, mixed methods and participatory approaches were used for the review design and data collection. Mixed methods are a recognized and validated research methodology often employed in public health and organizational improvement arenas (Creswell, 2004; Bastian, 2016). Both quantitative (clinical data) and qualitative (descriptive) data were gathered, leveraging both datasets to provide a comprehensive understanding of patient outcomes and the gaps in care. Stakeholders validated conclusions drawn from both datasets to increase subsequent results' rigour, clarity, and transparency.

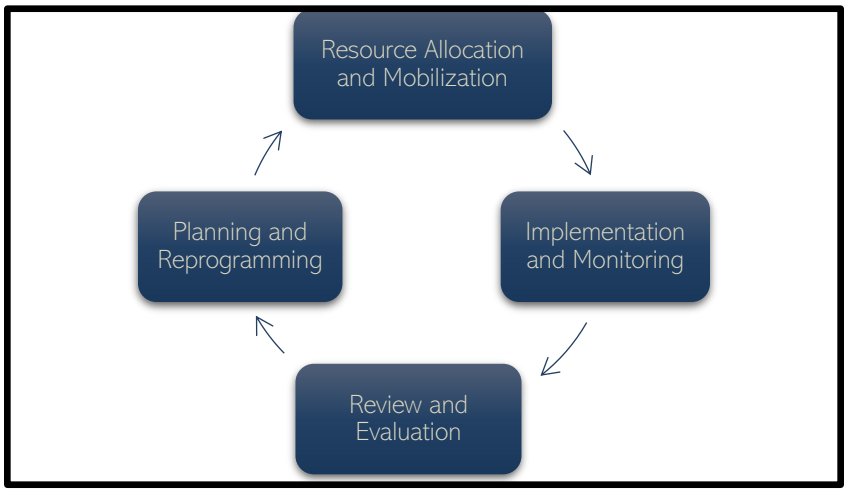
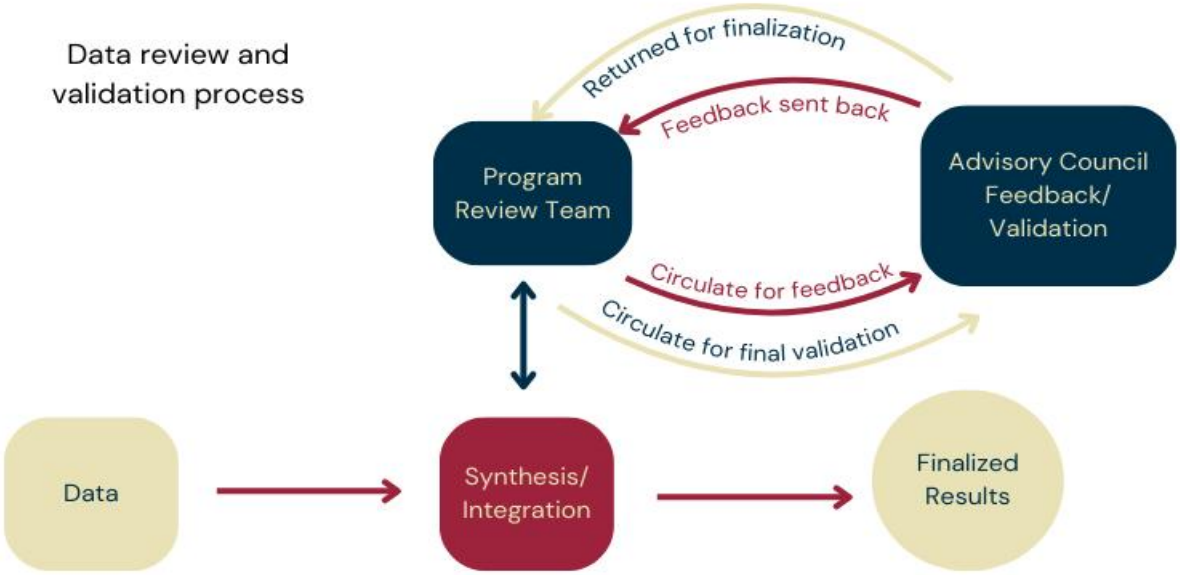


Figure 6 (left): WHO's four-phase process for program reviews

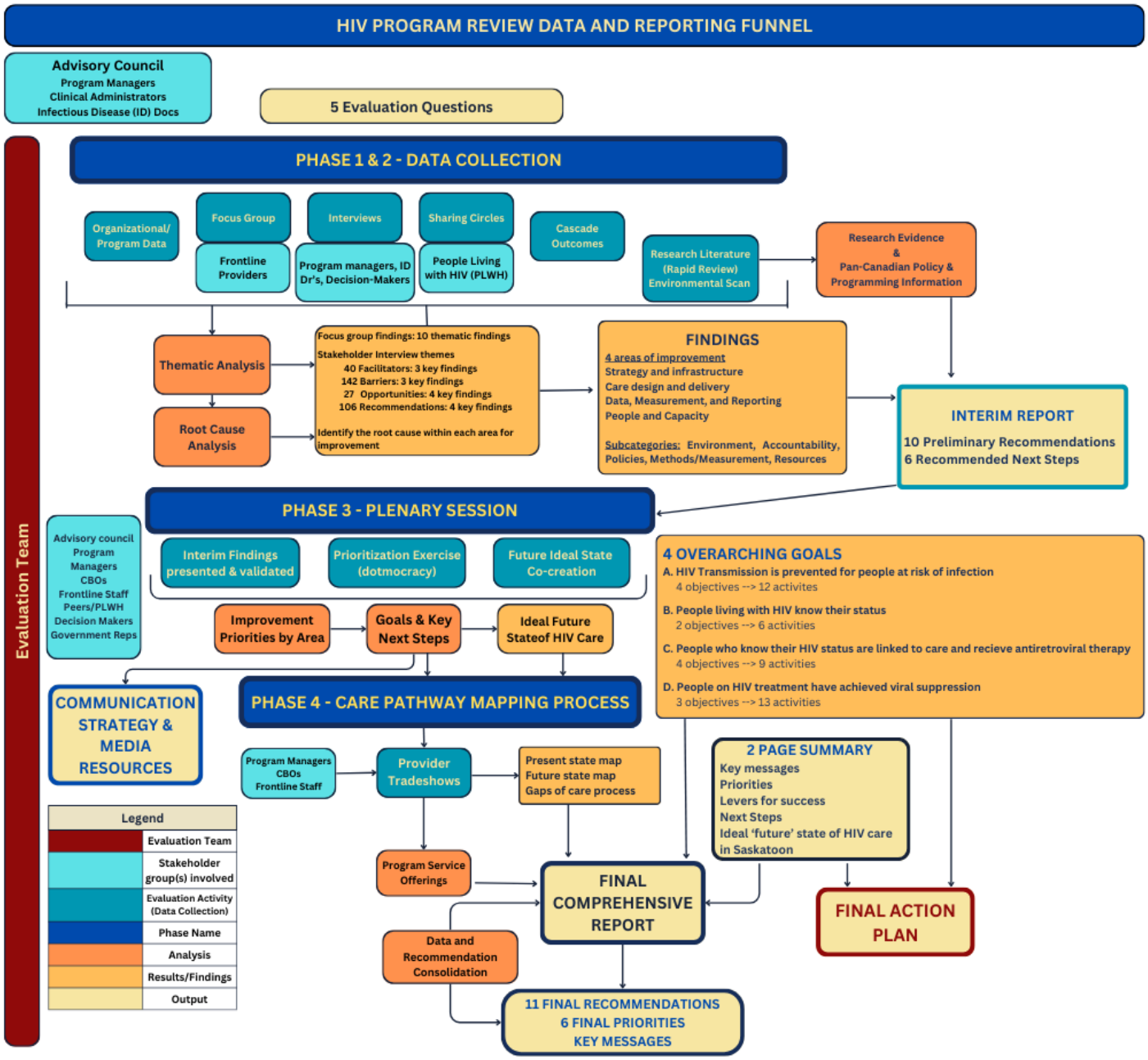
Figure 7 (below): Integrated Knowledge Mobilization process for data review and validation between review team and advisory council.



Participatory methods and integrated knowledge mobilization approach (figure 7) utilized input from an established advisory group of providers, service organizations, administrators, care and services providers, and consultations with people living with HIV to guide and inform the evaluation and validate data as it was

reported at each phase. The Deliberative Dialogue method (Boyko 2012) was used during the plenary sessions. Deliberative Dialogue is a validated participatory method used in health care and policymaking that brings together diverse stakeholders (community members, policymakers, service providers, people with lived expertise, researchers, and organization representatives) to collectively review research evidence, validate findings, and utilize the evidence to inform and co-design policies, strategies, and programs. A detailed description of the methods used at each phase of the program review can be found in Appendix 5.

Figure 8: HIV Program Review Data Analysis and Reporting Process

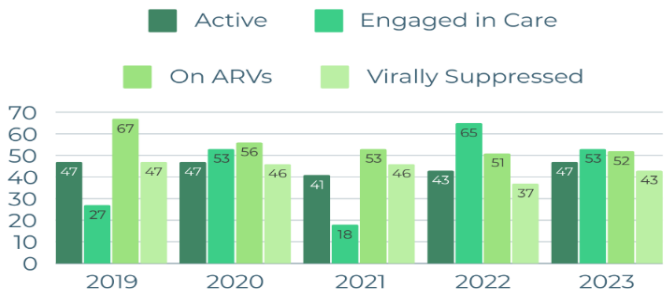


RESULTS & FINDINGS: ALL DATASETS AND PHASES

A. HIV PROVIDER PROGRAM DATA

The following are snapshot summaries of all data presented and information gathered from key care and service provider groups that deliver HIV care and support services in Saskatoon. Clinical data, stakeholder interviews, and program presentations provided during the pathway mapping processes were compiled and distilled to give a snapshot of the provider's care model, resource-to-case ratio, cascade outcomes, cascade definitions, and an overview of the services they do and do not provide. It is important to note that in the absence of shared outcome metrics and definitions, comparing across programs is complex and can be easily dismissed. Further, while some partnering and resource sharing between organizations exist, the data presented is restricted to only what was reported by the organizations. While enhanced data and outcome reporting are critical recommendations for this evaluation, the information in the following snapshots demonstrates reportable outcomes and measures across programs.

POSITIVE LIVING PROGRAM (PLP)



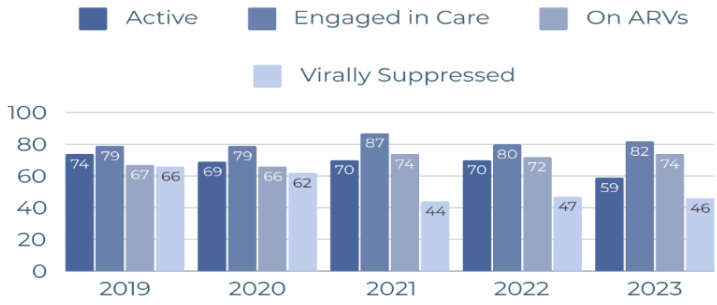
Total cases (2023): 1103

- Active cases: 513
- Deceased cases: 147
- Inactive cases: 443
- Nursing: 2.5 FTE
- CMs: 10.0 FTE
  (1 in Public Health, 3 pending)
- **Resource to Case ratio: 12.5 to 513***

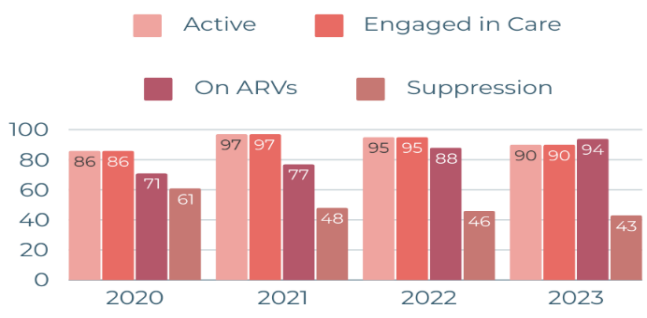
WEST SIDE COMMUNITY CLINIC (WSCC)

Total cases (2023): 1016

- Active cases: 670
- Deceased cases: 227
- Inactive cases: 116
- Nursing: 0
- CMs: 0
- OWs: ~1FTE
- **Resource to Case ratio: 0 to 670**



SANCTUM CARE GROUP



Total Cases (Mar 2024): 241 clients

- Active Cases: 241 clients (64 in community)
- Nursing: 3
- CMs: 7*
- OWs: Included with CM *(91 Care & Housing Coordinator and 1 Sanctum 1.5 CM dedicated to post discharge.)*
  *excluding those outside of Saskatoon
- **Resource to Case ratio: 10 to 241**

Saskatchewan Health Authority

PROGRAM SNAPSHOT:

POSITIVE LIVING PROGRAM (PLP)

MISSION

To provide comprehensive, multi-disciplinary, patient-centered care to improve and maintain the health of individuals living with HIV and/or HCV, their families, and communities in the province of Saskatchewan.

PROGRAM DESCRIPTION & SUMMARY

Hospital-based tertiary care
Situated wtihin SHA care delivery structure
Program delivery and services
Care pathway description

CARE MODEL/APPROACH

We provide complex, specialist based care using a multidisciplinary approach with the following complement of staff:

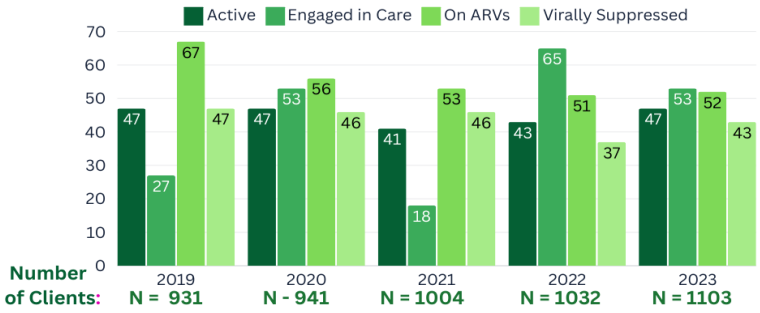
- Physicians
- Nursing
- Social work
- Pharmacy
- Case Management
- Teams provide trauma informed care with a harm reduction approach

1103	513	443	147
Total Clients	Active Clients	Inactive Clients	Deceased Clients

3.5 FTE	10.0 FTE	12.5 : 513
Nursing	Case Managers	Resource to Case Ratio

**+ indicates additional funds for street sexual health, and HIV strategy `Case Management*

CASCADE OUTCOMES



CASCADE DEFINITIONS

Active	Engaged in Care	On ARVs	Viral Suppression
HIV appt within 2 calendar years	HIV appt within 1 calendar year	HIV Rx prescribed within 1 calendar year	VL of <40 copies/ml w/i time period

TOTAL NUMBER OF CASES FOR TIME PERIOD

SERVICES PROVIDED

- Community & chronic disease management focus
- Clinical assessment, education, counseling, immunizations, harm reduction, treatment plans, and referrals
- Collaborate with inpatient care teams, and supports
- Advocating for client care needs
- Continuous Care across the life span
- Collect contacts with transfer to Public Health.
- In patient ward visits – by priority – support, engagement, HIV bloodwork, ARV quick starts, collaborate with social worker, support referrals
- Offer transportation support & vouchers
- Clinics with ID doctors at clinics including WSCC

SERVICES NOT PROVIDED:

- Offer transportation in personal vehicles
- Drop in Care at PLP RUH
- Independent clinic space
- Primary Care
- Opiate substitution/Additions management
- Public Health notifications/contract tracing
- Care for non STBBI concerns

KEY THINGS TO KNOW:

- **Saskatoon based program that provides services and support to clients living throughout Saskatchewan.**
- **Provide support to other organizations such as WSCC, LINK Line, STEPS, Access Place in Prince Albert.**
- **ID specialists provide care for non HIV related infections impacting our clients**

Saskatoon Community Clinic

PROGRAM SNAPSHOT:
WESTSIDE COMMUNITY CLINIC (WSCC)

MISSION
Excellence and Innovation in Co-operative Primary Health Care. We believe HIV is a Primary Health Care diagnosis and should be treated as such

PROGRAM DESCRIPTION AND SUMMARY
Community-based clinic located in Saskatoon's core providing opportunistic integrated wraparound care to individuals, often with complex health needs and social determinants of health.

MODEL OF CARE
A comprehensive interdisciplinary care team that can address the holistic needs of every individual.

APPROACH
We use our values to guide our approach:
- Collaboration
- Accountability
- Engagement
- Equity
- People Centered

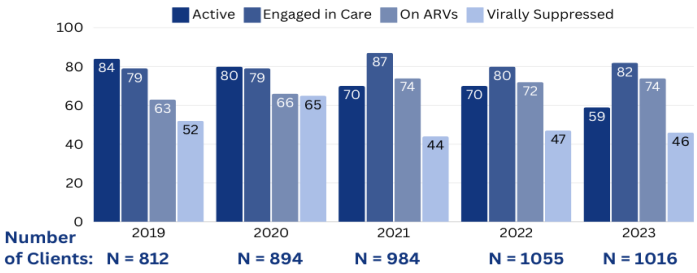
1016	670	116	227
Total Clients	Active Clients	Inactive Clients	Deceased Clients

0*	~1.0 FTE**	0 FTE	0 : 670
Case Managers	Outreach Workers	Nursing	Resource - Case Ratio

**Case Managers paid by and reporting to the PLP Program (Sask Health Authority) are situated at WSCC and provided full clinic and electronic medical record access by WSCC*

***Outreach workers are not specifically funded as HIV work. They were assigned HIV work to them, despite the absence of specific funding.*

CASCADE OUTCOMES



CASCADE DEFINITIONS

Active	Engaged in Care	On ARVs	Viral Suppression
HIV appt within 2 calendar years	HIV appt within 1 calendar year	HIV Rx prescribed within 1 calendar year	VL of <40 copies/ml w/i time period

TOTAL NUMBER OF CASES FOR TIME PERIOD

SERVICES PROVIDED:
- Provide all HIV-related medical care - ARVs initiation, HIV chronic disease management, acute management of HIV related conditions; management of primary care and mental health/addictions co-morbities
- Counselling services
- Outreach services
- Inpatient supportive services from physicians
- On-Site Lab Services and Diagnostic Services
- On-Site Pharmacy and pharmacy supports

SERVICES OUTSIDE SCOPE BUT DOES DUE TO PUBLIC HEALTH GAP:
- Public Health related contact tracing, partner notification, rapid engagement/re-engagement in care

SERVICES NOT PROVIDED:
- Intensive case management
- Housing services

KEY THINGS TO KNOW:
- **Have been operating in Saskatoon since 1962, and since 1975 on 20th street as Westside Clinic.**
- **Organization has a rich history of providing innovative, leading-edge interdisciplinary Health Care**
- **Co-operative organization that is governed by a Board and membership**
- **Largest HIV clinic in SK (>750 active patients, #s growing)**
- **Directly Ministry funded for day-to-day clinic operations; SHA funding supports extended hours services (evening and Saturday clinics); only HIV specific funding in is 0.5FTE Counsellor position to be connected to the HART team.**
- **Serving patients from all 70 First Nations that are encompassed by the borders of Saskatchewan**

PROGRAM SNAPSHOT:

SANCTUM CARE GROUP

MISSION

Deliver evidence and outcome-based care to people living with and at risk of contracting HIV that is dignified and non judgemental

PROGRAM DESCRIPTION AND SUMMARY

- Not-For-Profit Registered Charity
- Works directly with those affected by HIV/AIDS, chronic illness, substance dependence, housing instability, mental health issues and poverty.

CARE MODEL/APPROACH

- Trauma-Informed
- Harm Reduction
- Evidence-Based Interventions
- Focus on outcome-based care
- Approach substance use disorder as a disease rooted in trauma
- Integrated wrap around (medical, social, environmental) and evidence based care

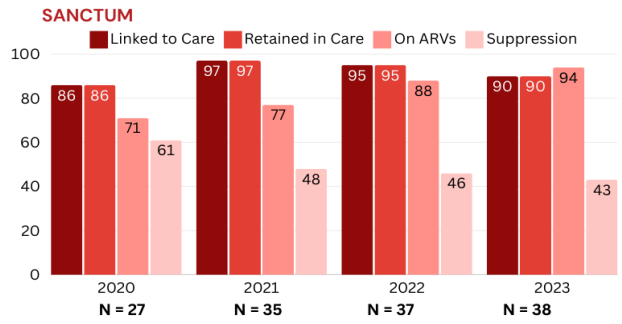
SUB-PROGRAMS & NO. OF CLIENTS/YEAR

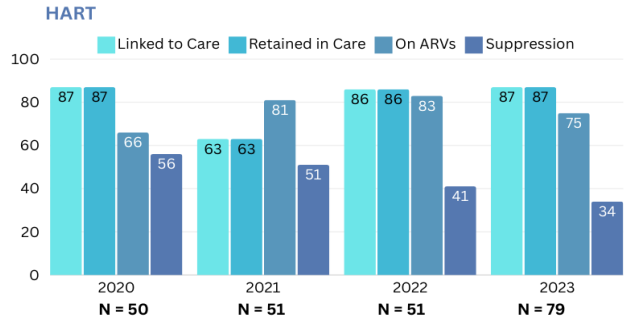
SANCTUM: 46
SANCTUM 1.5: 34
HART: 60
PORT: 165
2nd Steps: 21 units

241	3	7*
Active Clients	Nursing	Case Managers

Included with CMs	64	10:241
Outreach Workers	# of clients in community	Resource - Case Ratio

CASCADE OUTCOMES





CASCADE DEFINITIONS

Active	Engaged in Care	On ARVs	Viral Suppression
HIV appt in last 6 months	2 HIV appts w/i 12 months	HIV Rx prescribed w/i 1 calendar year	VL of <40 copies/ml at or before 3 month F/U

TOTAL NUMBER OF CASES FOR TIME PERIOD

SERVICES PROVIDED

- Intensive Case Management with contact and engagement standards
- Transitional housing with medical support to manage complex health and social issues
- Hospice care
- Transportation
- Advocacy
- Discharge planning and support for acute care patients
- Clinical assessment and support
- Linkages to Infectious Disease, Primary Care, psychiatry, pediatrics and public health, Income Assistance, Housing and other supports and programs
- Case plan coordination
- Focus services of patients who have highest complexity
- Peer and Elder support

KEY THINGS TO KNOW

- **Started by the frontline, continues to be frontline and peer informed across all work.**
- **All program outcomes are derived through meticulous and comprehensive metrics gathering.**
- **Sanctum's models of care are innovative approaches have received national and international attention.**
- **Sanctum Care Group has and continues to be a leader in alternative care approaches.**
- **Viral suppression measured at <40 at 3 months, which is related to low viral suppression in cascade data**

PROGRAM SNAPSHOT:
SASKATOON TRIBAL COUNCIL HEALTH CENTRE (STC)

MISSION
The Saskatoon Tribal Council is dedicated to creating a respectful environment that inspires and encourages innovation and leadership while building and strengthening partnerships with communities, individuals and organizations.

We do this by providing exceptional program and service delivery, sustainable economic development, strong political support and a representative voice for Our Nations while respecting the sovereignty of each First Nation.

VALUES

FIRE - **F**airness, **I**ntegrity, **R**espect, **E**xcellence

PROGRAM DESCRIPTION AND SUMMARY
STC offers a broad scope of integrated services that include STBBI testing, sexual health education, and harm reduction programming.

CARE MODEL/APPROACH
"Everything STC does is for the people"-Tribal Chief Mark Arcand
Relatives are treated as human beings deserving of dignity and respect. They have the right to self-determination and remain the drivers of their care through their own self-identified goals

Indigenous culture, values and traditions embedded in program and service delivery
Re-connection back to culture, community and kinship

Holistic approach to care with overall Wellness viewed as the whole person being in balance (spiritual, mental, physical, emotional)
Trauma Informed Care Approach
Meeting the person where they are at

•We provide a safe, respectful, judgement free environment, where our relatives are treated with dignity, respect, and as people deserving human kindness and understanding

SERVICE PROVISION TRENDS
In lieu of cascade data, services offered are summarized below.

3718	1.5 million	43788	~60,000
Relatives (2022)	Needles provided (2022)	Health Service Visits (2022)	# of harm reduction services/year

1655	17	40-60
KYS reached (2023)	First Nations Communities reached	# of new clients/month (2022)

SERVICES PROVIDED
- STBBI testing & treatment
- Public Health follow-up
- Basic Wound Care
- Immunizations
- Health and Social Service Navigation
- Advocacy
- Addiction Counselling and Detox Services
- Cultural Supports
- Harm Reduction
- Naloxone training and distribution
- Appointment Accompaniment
- Transportation (limited)

SERVICES NOT PROVIDED
- Primary Health Care
- Intensive Case Management
- Intensive Crisis Intervention Management
- Programming due to lack of space
- Home visits/provision of care in their home

KEY THINGS TO KNOW
- **Open 365 days a year and located in core neighbourhood.**
- **Has operated SHARP (since 2007) and Know your Status Programs to reduce transmission of HIV within the community and among First Nations and rural communities.**
- **Has very successful needle exchange program with a needle return rate of 85-96% annually**

B. HIV CARE FRONTLINE PROVIDERS FOCUS GROUP

1. Stressed workforce: Providers described having to work in a constant state of crisis and expressed a range of emotions from passion and fulfillment to anger and burnout.
   … "must keep consistency. Must keep people in their jobs"… "hard to keep people" "losing so many people over the years because of trauma"… "the most senior case manager is 2 years"… "feels like a lost cause sometimes"… "this is mentally and physically taxing"… "workload is soooo heavy. It's not even possible"… "caseloads are overbearing"

2. Resource limitations: Limited or insufficient resources were emphasized by all providers. Human resource limitations included recruitment, training, workload management, and retention, long-standing vacancies, technology, transportation issues, limited clinical space, and limited resources for specialized needs.
   "Passion. Anger. Hurt"… "feeling so hopeless"… "working in isolation is a problem"… "so many barriers and silos" …"we all have the same barriers – not enough resources"…"we are so clearly underfunded"… "we've seen it. We've done it. But there needs to be more resources"

3. Workload management: Almost all providers described little to no balance in their workloads with no effective mechanisms or resources to address such imbalances, as well as the volume and complexity of client needs.
   "this is social work. People can't concentrate on health when they are in social distress"… "education is still needed. I spend so much time just educating people"… "when I see a need and I try to meet that need but there are so many needs"… "I am just trying to find a role for myself where I can make a difference"… "we are all in crisis management"… "reaction is not prevention"… "caseloads are overbearing"

4. Access to clients and information: All providers noted difficulty with getting the right information at the right time for their clients. Many described spending incredible amounts of time calling for information, reporting among organizations, locating clients, or accessing client information on their behalf. Complicating the matter is a lack of a centralized database, protocols, or inventory for sharing information.
   "the lack of information or knowledge is gross"… "I know there are cases reported that I do not see reflected in the numbers" … "we need to share information"… "consent processes are huge barriers to providing care" … "we don't have transparent accountabilities"

5. Lack of a clear and consistent vision and plan: There is no common nor shared approach to HIV care across the province, with a perception that there is no clear priority to reduce infection rates.
   "lots of work going into documents but we need boots on the ground"… "outreach and case managers are so important"… "we need a provincial approach. This is a provincial issue"

6. Lack of standards and coordination: A sense of chaos and 'reactive' care was described across all aspects of work for every provider role (outreach, case workers, nursing, frontline administration, and pharmacy). Additionally, several providers expressed frustration and opportunities for improvement regarding wait times, process efficiencies, housing, and the need for more trauma-informed, culturally appropriate services and care.
   "I wish I could do my job more"… "I am not doing the job I am supposed to be doing"… "must be more coordinated"… "we have to work together better" … "if we aren't working together, we aren't

doing much"… "so many roadblocks now"… "seem to be stuck in this place – we all want this, but return to our silos"… "we need a provincial approach just like we have with TB – that's what is needed"

7. Lack of accountability and leadership: The lack of leadership, decision-making and accountability for outcomes was noted as a significant barrier to improvement. While turnover in leadership positions responsible for HIV and STBBI care at SHA was a predominant issue, a lack of leadership skills, competency to manage the breadth of their mandates, and being too far removed from frontline providers to give HIV and STBBI care the prioritized and relevant attention it requires.
   "we are not being heard"… "even though we say something, nothing gets done"… "we have these meetings and …nothing"…"leadership says 'yes, yes, yes' and then… nothing. There isn't any change"… "this issue is not a priority. HIV needs to be prioritized and not lumped with other things. We need an actual HIV targeted approach"

8. Systemic trauma and racism: Providers described a sense of exhaustion in providing good care to their clients in a social and health system that has pervasive racism and fosters on-going trauma.
   "when I started I didn't see the disease – I saw the person. I saw how people were treated by those who were supposed to help. Now I am just mad."…"its so obvious that people don't care about poor people"… "this is really hard. Mental health is a huge barrier in people's journey"…"addictions, poverty, trauma, disrespect – we know the problem"
   "we all share passion and commitment and we know the impact we can and do have. But there is just so much chaos among the patients and among ourselves"…"must apply trauma-informed and compassion for each other"

9. Delayed responses to change in population needs: While providers shared a general sense that all programs were designed to be responsive to care needs, upstream issues and changes in trends are often not addressed or care changes are slow to address these trends.
   "a lot of change is needed. This will take work" … "meth is not crack or heroine. We need to treat it differently"… "how we did things in 2011 does not work anymore"
   "80% or more is social stuff"… "it's mental health and addictions. That is what we are talking about"… "all of us are frustrated" … "we need to trust each other and respect our different approaches so that we can work together"

10. Representation: Very few session participants represent Indigenous, vulnerable populations or worldviews which is needed to support culturally tailored approaches to the population.
    "we need better representation"… "we need to hear from people living with the diagnosis"

C. SHARING CIRCLES AND INTERVIEWS WITH PEOPLE LIVING WITH HIV

A sharing circle with people living with HIV (PLWH) was conducted in October 2023 at Station 20 West, followed by individual interviews. The sharing circle was led by two trained peer support workers and was supported by a First Nations Elder. Individual stories (n=10) were gathered through sharing circles (n=7) and interviews (n=3), collected by audio recording, and later transcribed. Participants all recalled how scared they were of their diagnosis and the general feeling of fear and stigmatization they experienced in their day-to-day lives. The following are some of the highlights and quotations from participants:

"I have had the same doctor all along which has helped. I really like that. That has helped a lot... My doctor is still my doctor. I really like that my doctor has stayed with me and I haven't been bounced around."

The good: Participants noted being well informed by physicians/providers of their diagnosis and treatment options and feeling supported by community organizations for support information, services, and additional needs.

The bad: Participants reported more negative experiences than positive ones, including breaches of confidentiality, not being given care due to a lack of address despite requiring emergency care, stigma and racist attitudes from clinic staff, pressure from care providers to get sterilized, being informed of their status over the phone right before a weekend, feeling like being 'in a fish bowl', being asked the same questions multiple times by different people, and not being listened to when reporting medication made them feel sick.

"The clinic wouldn't see me because I don't have an address. Even though I told them that my baby hadn't moved in 24 hours and they said that they couldn't do anything about that and they couldn't see me. I left feeling very discouraged so I went to the needle exchange place and got some riggs. I told the staff there that my baby hadn't moved in 24 hours because they seemed like the only people who cared. I wanted to get checked so they made a few calls and I was able to see a doctor within a few hours."

Recommendations: Participants in sharing circles and interviews recommended addressing confidentiality and stigma through more training for clinical staff and providers, immediately connecting to peer support services, and improving reception and the atmosphere of empathy and welcome at clinics to help people feel less ashamed or anxious about accessing care.

No one was listening to me. They kept giving me the same pills. I told them I didn't feel good on them. I didn't feel they were helping me.

"More education needs to be done with the doctors and nurses and assistants who work with them. Because when you first get there and are going through all of this, you want to feel welcome. Not pushed aside or looked down on. That's how I felt."

"It could have been better by having someone who understands to contact me to tell me, rather than over the phone. I don't even know who that person was. It was just some female voice."

"They told my sister when she had her baby. And the doctors came in and her boyfriend was there. They didn't ask for privacy – they told everyone in the room. I was there. Everyone was there and they just told everyone. No confidential. Now that boy is in care right now."

D. KEY STAKEHOLDER INTERVIEWS

A thematic analysis from key stakeholder interviews identified facilitators (n=40), barriers (n=142), opportunities (n=27), and recommendations for action (n=106). Among the barriers, categories were identified as 'areas for improvement' with specific themes articulated within each area. A secondary 'Root Cause Analysis' of the data (Adriana et al., 2022) identified care gaps, tangible goals, and articulated actions to improve care programs and service delivery. The summary of the themes below:

Strategy and Infrastructure

- Lack of strategy (shared or otherwise),
- Insufficient resources
- Leadership & accountability for HIV outcomes
- Care coordination
- Agency role definition
- Care pathway clarity
- Organization silos of organizations
- Institutional resistance to change

Root cause:

- No provincial/local HIV (or STBBI) strategy or deliberate/dedicated infrastructure implemented or in operation

Care Design and Delivery

- Integrate additional services into programs
- Implement collaborative mechanisms to share information across programs.
- Need more clinical space
- Lack of mechanisms to adapt programs as needs shift
- Need policies that reduce access barriers for clients & de-silo programs.
- Need shared vison, definitions & standards

Root Cause:

- No consensus on how to operationalize an integrated approach.
- HIV care services insufficiently prioritized

Data, Measurement, and Reporting

- Inconsistent care cascade data definitions, metrics, data collection and reporting between programs, providers and agencies,
- lacking mechanisms for data sharing were central to all conversations had throughout the evaluation process.
- Lacking public awareness regarding HIV stats
- Dissatisfaction with current policies
- Data discrepancies due to differences in cascade definitions.

Root Cause:

- Embedded prejudice, and lack of accountability (at all levels) enables inaction on data collection and addressing the current HIV crisis

- A lack of system or procedure for sharing information is restricting collaboration and comprehensive patient care.

People and Capacity

- Emphasis on human resource, clinical space, and funding needs to meet demand and reduce rates.
- Current staffing is insufficient to meet volume of complex care needs
- Staff burnout + high turnover left care teams overloaded.
- Loss of expertise and lack of sufficient training contribute to knowledge gaps in practice
- Lack of infectious disease specialists, increase demand on frontline providers
- Tensions between teams and no formal collaboration mechanisms sharing hinder resource leveraging
- Historic champions are nearing retirement with no clear successors

Root Cause:

- Lack of awareness of client experiences and staff mistrust of system
- Lack of/unclear leadership to lead provincial goals.
- Insufficient and unresponsive funding.

E. TWO-DAY DELIBERATIVE PLENARY SESSIONS WITH STAKEHOLDER GROUPS

In the fall of 2023, a two-day plenary session was held with broad stakeholder groups to present the findings from the program review and engage stakeholders in validation and prioritization exercises to confirm the findings, set the next actionable steps, and establish a common 'future ideal state' of HIV care in Saskatoon. An Action Plan was developed and included a combination of evaluation and improvement tactics. It is available via the SIDCN website. Below are the results of the plenary sessions:

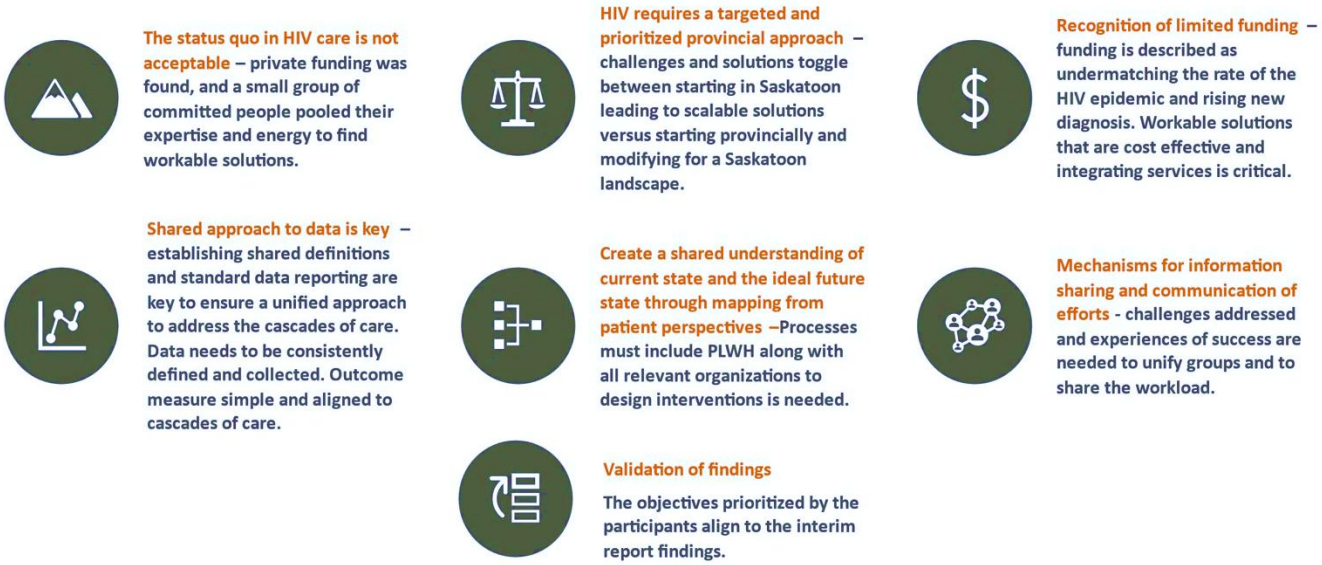
Validated Findings & Desired Outcomes for HIV Care in Saskatoon
(See Appendix 6.0 for a full detailed table)

Report Theme	Desired Outcome
Strategy & Infrastructure	A collective strategy is adopted and implemented to achieve UNAIDS 95-95-95 targets through: a) Effective HIV care continuum & transitions b) Engagement & communication among and across stakeholders c) Commitments to making Saskatoon a 'Fast-tracked City' d) Sufficient & responsive funding
Data measurement and reporting	Accurate and shared data and reporting that effectively demonstrates current state and trends and informs HIV care, establishes transparency and accountability, equitable and responsive resource allocation and investment. Outcome based measurement and accountability. Developing and implementing social outcome and vulnerability measures.
Care design and delivery	Care continuum is clear, effective, efficient, graduated, accessible and advances improvements in health disparities, HIV prevention, testing (including self-testing), access to rapid treatment, linkage to care and after-treatment program to maintain viral suppression.
People	People capacity to respond to the growing complexity of needs. Retainment strategies for care and service providers. Develop and implement an enhanced peer support network. Adequately fund the support services required to meet the complexity of need.
Capacity	Develop and implement a communication strategy to effectively inform, engage and mobilize improvement. Targeted HIV resourcing to address the needs.

Notable Takeaways:

- Early wins – several participants were able to offer quick fixes/solutions
- Inputs from participants further validated the evaluation report's findings
- A shared vision for HIV care in Saskatoon helped prioritize next steps and actions

DELIBERATIVE PLENARY SESSION - KEY MESSAGES



Levers for Success

- Participating stakeholders are effective advocates and can influence change
- The HIV Collaborative is a complex care initiative that was challenged in getting fully realized and without sufficient leadership with decision-making authority
- SHA agreed to share processes for how care pathways are proposed and advanced in the province and funding requests
- Other resources can/should be leveraged (e.g., syphilis strategy, and mental health & addictions, coordinated care coordinator, intersectional activities)
- Teams and organizations are working hard towards the same goal
- The group is committed to enhancing communication and trust across their organizations
- Reliable and shared approaches to data capture are a shared priority.

F. PROCESS MAPPING FOR INTEGRATED HIV CARE PATHWAYS

The plenary session highlighted that provider groups and community-based service organizations lack awareness of each respective program's full scope of service offerings and how patients access and move through each program. In the spring of 2024, the evaluation team led service provider 'trade shows, with each provider organization presenting its service offerings, intake criteria, program outcomes, care pathway, and referral process.

Presentation data was collated to co-develop integrated clinical care pathway process maps for the HIV care ecosystem across Saskatoon. Process mapping was used to identify overlaps and gaps in care as a management method for analyzing the current state and designing a future ideal state. Current state (Figure 7) and ideal state (Figure 8) clinical care pathway maps were developed and presented to front-line providers and administrators to validate and finalize through a consensus-building process. The outcome of the mapping process provided an opportunity to review care gaps and determine priority areas for improving and streamlining HIV care and service delivery in Saskatoon. The method also allowed providers and evaluators to understand the scope of services offered, resources utilized, strengths and areas of improvement, desired outcomes for HIV, and care approaches employed by each of the four key providers – the Saskatchewan Health Region (SHA) Positive Living Program (PLP), Westside Community Clinic (WSCC), Sanctum Care Group (Sanctum), and Saskatoon Tribal Council Wellness Center (STC).

Table 3 summarizes the data collected and indicators of success for each organization. This comparative grid allows for a more comprehensive portrait of the HIV care ecosystem and services available within Saskatoon. Each organization also reported its strengths, areas for improvement, and desired future (Table 4), which informed the future state clinical care pathway mapping process. The data also informed the Program Snapshots for each key provider organization, found on pages 12-15.

Figure 7: Current State HIV Care in Saskatoon

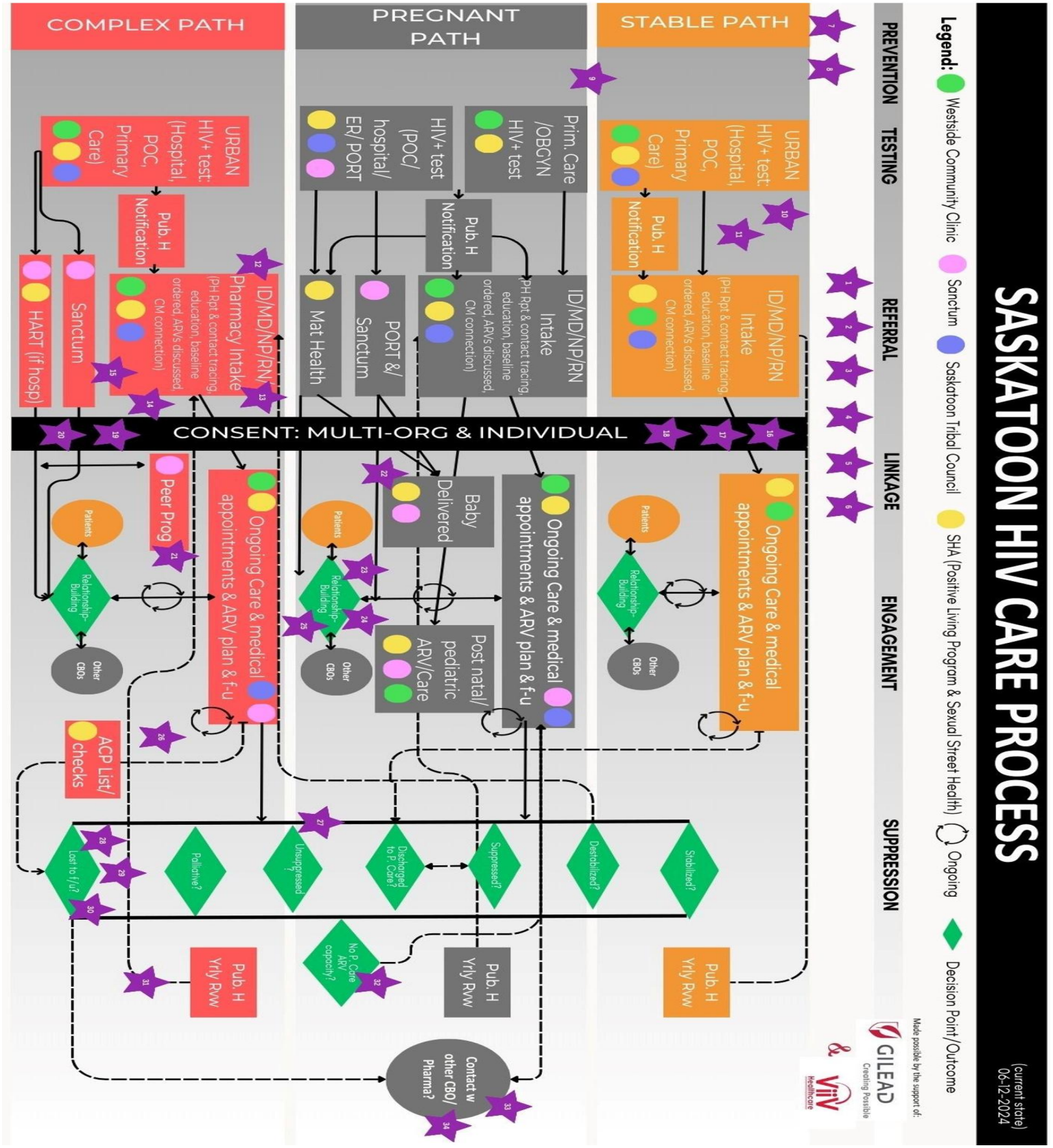


TABLE 3: SASKATOON HIV PROGRAMS: DATA COLLECTION AND INDICATORS OF SUCCESS

	Primary Care Model	Data Collected	Indicators of Success
PLP	Acute-Hospital-based care	• Referrals • New diagnosis • Re-engaging in care after lost to follow-up • Engagement in care • Cascade data • Clinical care • Peds/pregnancy • Inpatient visits/support	• Cascade of Care Data
WSCC	Community-Based	• HIV Cascade data • Volume statistics - appts, lab visits, counselling/allied health services • Mental health and addictions specific data • **lacking housing data	• Patient Satisfaction surveys • Participation in research programs • Improved clinical outcomes • Member/Patient driven feedback • QI
SANCTUM	Pre/Ante-Natal	• Demographics • income & housing status • Social supports & stability • Substance use & addictions support • Mental health • STI status • Prenatal/Postnatal care • CD4/vial load	• Progressive improvement across data measures
STC	Indigenous-Led / Culturally-focused	• Relative meets self-identified care goals • Collaboration with other organizations to support a relative(s) • # of relatives accessing services • # of new relatives accessing services • Supports provided to FN communities across Saskatchewan • Meeting accreditation standards	• Relative narratives & feedback • Quantitative data, service access (new & continual) • Program Reports (monthly) • Health centre database • Accreditation

TABLE 4: SASKATOON PROGRAMS: STRENGTHS, SELF-REPORTED AREAS OF IMPROVEMENT, DESIRED FUTURE

	Strengths	Need for Improvement	Wishing to see in the future
PLP	• Creating partnerships • Client engagement/community relationships • HIV nursing care & pharmacy support specialization • Strong working relationships with ID physicians • Work with a strong multidisciplinary approach • Providing support via Case Management & Social Work	• Data collection • Measuring outcomes • Interventions Evaluation • Increasing staffing levels • Improving Peer Support Networks • Enhancing relationships within the HEALTH network among practitioners	• Streamlining processes with community partners. • Coordination in EMR systems. • IT & epidemiological insights to improve EMR use & data collection. • Improved relationship across the Government ministries.
WSCC	• Opportunistic Care – not perfect, but multiple procedures in place to ensure the best chance of providing the right care when client presents &ready • HIV Care as PRIMARY HEALTH – the interdisciplinary solution to holistic HIV care in a PHC setting.	• Access– client panel at Westside Clinic has tripled in 5 years. This trend is expected to worsen. • Comprehensive flow– Need to improve how HIV clients flow into and out from the Outreach team, and identify who those clients should be.	• Rapid access to opportunistic care. • 95-95-95. Anything less means we can improve. • Connections made as acuity changes in patients. • Recognition of the patient journey as non-linear. • Senior Provincial Leadership (SHA and MOH) strategically & directly connected to frontline organizations. • Listen to provider needs & communicate clearly around what can happen & what will not.
SANCTUM	• Engagement • Linkage to care • Improving health & social outcomes • delivering services that rooted in client autonomy and through a trauma informed lens • Creating programs that fill gaps in care & offer cost effective alternatives that have demonstrated impact • Transparency with patients & funders • Staff retention • Partnerships with organizations providing similar or complementary services	• Local awareness of our programs and how they operate • Management of a rapidly growing organization to ensure appropriate staffing/admin • Organizational structure to meet rapid pace of expansion of services	• Standardized approach to case management & engagement. • Standardisation of data collection demonstrating impact for the clients. • Seamless transitions between teams. • Care coordination rooted in client's needs.
STC	• Walk in availability/immediate support • Indigenous led care (STC) • Culture & ceremony embedded in all program & service delivery • Representative work force • Holistic approach to care • Advocacy • Harm Reduction Approach	• Revitalization and growth of programs and services • Continuing to collaborate and build strong partnerships with other organizations	• Investment of resources and funding into programs & services at STC Health Centre to expand service delivery through Indigenous Model Of Care lens. • A streamlined & coordinated referral approach between community & health system for supports & services. • Provider organizations working from same approach through creation & implementation of policies, procedures, process maps, training.

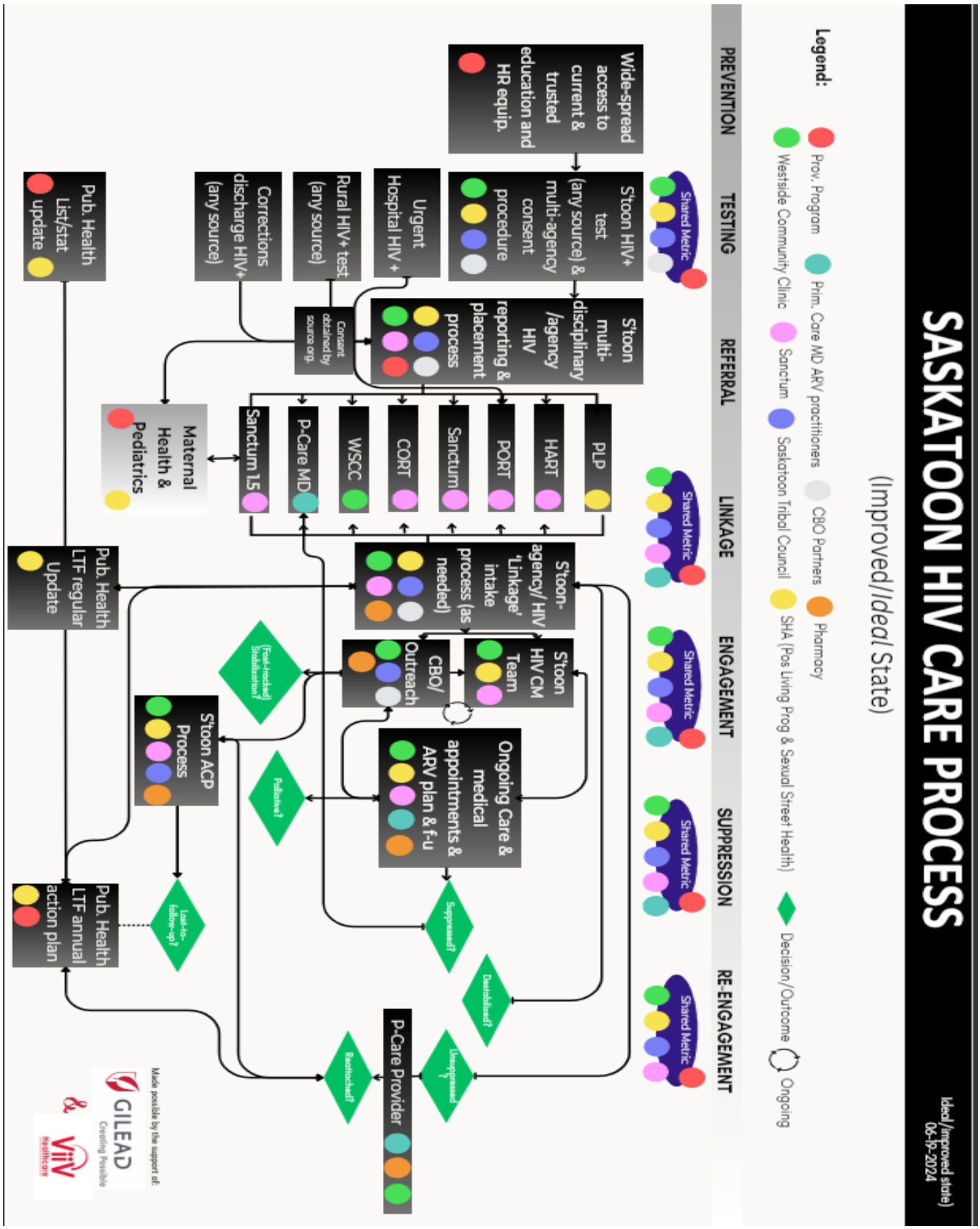


Figure 8: Ideal State HIV Care in Saskatoon

G. CASCADE OF CARE DEFINITIONS REVIEW

The HIV care cascade is a framework that measures the engagement and utilization of a continuum of HIV-related health services while establishing outcome measures. The primary purpose of the cascade markers is to track the progression of people living with HIV, beginning with acquisition through to virologic suppression. The cascade markers are tools to monitor and evaluate HIV treatment and care, identify gaps and engagement patterns, monitor the performance of the health system and/or programs providing HIV-related services, and identify challenges in the continuity of care across populations and clinical sites. The HIV care cascade is conceived as a linear, unidirectional continuum in which a person enters at the beginning and only exits upon death or loss to follow-up.

A review of care cascade definitions and measurements was undertaken across service and care sites in Saskatoon to collate how HIV-related clinical outcomes are gathered, measured, and reported by programs in Saskatoon. This review aims to inform recommendations around cascade definitions and data reporting to improve consistency in measuring, transparency, and reporting HIV care program outcomes to allow for a more precise and accurate understanding of care needs and service effectiveness. There is heterogeneity across sites in terms of definitions, reported numbers adjusted to fit specific care models, funder requirements, and surveillance program needs. Standardizing definitions and reporting are critical to comparing program and clinical outcomes across care sites. Distinct differences across Saskatoon care sites have resulted in discrepancies in reported cascade outcomes and debates about the best definitions to use.

The evaluation team reviewed care cascade definitions and metrics to support recommendations and discussions with providers in pursuit of standardizing cascade metrics in Saskatoon and across the province. Heterogeneity among cascade definitions is not uncommon and well documented, making assessing programs and comparing effectiveness complicated. Addressing this issue from a national scope, an Ontario-based study (Nicolau, et al, 2022) outlines the various provincial-level differences across cascade definitions and monitoring (Appendix 7.0). They recommend aligning with the UNAIDS 90-90-90 measurement definitions, as adopted by the Public Health Agency of Canada. The strength of this approach is the use of international comparable markers. However, a key limitation to this highest-level approach to reporting is that the specific gaps in the care continuum are not well-demonstrated.

A Manitoba-based study (McClarty, et al., 2020) argues that a linear cascade risk oversimplifies the complex cyclical cycle of entry and re-entry into care as experienced by many people living with HIV. The authors propose using a cyclical HIV cascade of care to better capture the nonlinear HIV journey by defining the numerator and denominator at each step, rather than cumulative and progressive. Defined with conservative, moderate, and lenient measurement indicators shared across organizations, this approach allows for a broader scope of outcomes for people living with HIV, regardless of engagement patterns or care complexity. The strength of this approach is it recognizes and responds to the cyclical nature of health system engagement and drills down into the continuum of care. However, this approach makes cross-site comparisons difficult.

Developing a strategy to measure the care cascade is critical but requires long-term planning and consensus building. The procedures to access, link and analyze the data are not only onerous and time-consuming and require the creation of new partnerships and the negotiation of legal agreements. Moreover, targeting funding is required for data maintenance and analysis. However, linkage and integration of quality data across platforms are needed to ensure timely, relevant estimates reflect the

actual situation on the ground to support policy, positive-action programs, and healthcare providers (Nicolau et al., 2022). Additionally, clinical data should be supplemented by socio-demographic information, including the structural and social determinants of health, to better understand the contextual nature of the cascade reporting data.

H. CASE MANAGEMENT

Case management, mainly stemming from issues with consent and information sharing, was stressed across datasets, particularly in stakeholder interviews (administrative leads, managers, clinical leads, decision makers), group consultation with frontline providers (including case managers), and plenary session discussions. The main barriers highlighted include:

- High burnout, demand, and staff turnover, leading to inconsistent care and service provision (leading to lost-to-follow-up and eroding trust among clients) at some sites
- No shared consent form to support a continuity of care across organizations or ongoing engagement with clients through transitions in and out of care
- Lack of role clarity and/or shared vision across organizations
- Caseworkers are not coordinated or cooperative across organizations/interdisciplinary teams
- Lack of standards and accountability measures across organizations
- Insufficient staffing to keep up with the demands of an increasing number and complexity of patients, while working in a constant state of crisis
- A sense of reactivity or lack of responsiveness
- Workload imbalances without strategies or mechanisms to address burnout

Context-specific details reported that case managers connected to WSCC are responsive to immediate/rapid linkage to care as they provide intensive and wrap-around services for those accessing their programs. While SHA case workers and outreach teams have experienced significant instability without clear accountabilities and restrictive capabilities (e.g. transportation, access to harm reduction supplies and engagement incentives), their clients encompass those involved in long-term case management and sporadically engage in care.

Recommendations and requests that emerged from the data include:

- Establish a consistent and ongoing case management strategy across organizations for long-term support and responsive to growing needs

- Establish and align goals and accountabilities across organizations to ensure case managers and frontline workers are working cohesively and in alignment

- Restructure case management to ensure role clarity with clear outcomes and appropriate allocation of resources aligned with the organizational care model with client care demands, supported by cross-functional and multisector teams to address the complexity of issues

- Implement a collective consent form used across sites to support continuity of care, offer rapid connection for newly diagnosed patients, increase retention in care across sites, reduce lost-to-follow-up rates, and reduce redundancies and care gaps throughout the cascade of care.

Effective case management aims to coordinate care, empower clients, ensure clear communication across sites, promote continuity of care, and maintain data security and confidentiality. Literature and best practices highlighted four explicit case management models that can clarify a case management approach. Different approaches are appropriate for various organizations and client-based needs.

1. Brokerage Case Management Model (Vanderplasschen et al.,2007; Rapp et al.,2014)
Focus: Connecting clients with appropriate services and resources in the community
Approach: The case manager acts as a broker, facilitating access to care across organizations
Role: Assessing needs, developing care plans, linking clients to services

2. Clinical Case Management Model (Mueser et al.,1998; Kanter, J., 1989)
Focus: Providing direct clinical interventions and therapeutic care
Approach: The case manager works closely with the client, conducts assessments, develops treatment plans, and develops trust in the health system
Role: Delivering clinical services, coordinating care across providers

3. Strengths-Based Case Management Model (Dieterich et al., 2017; Hangan, C., 2006)
Focus: Identifying and leveraging individual strengths, abilities, desires, and resources
Approach: Empowering clients, building on their assets and preferences
Role: Facilitating self-determination, fostering hope and resilience

4. Intensive Case Management (ICM) Model (Navarro et al., 2023; Rapp & Goscha., 2008)
Focus: Comprehensive support for clients with complex, high-intensity needs
Approach: Proactive, frequent, and intensive interventions tailored to a client
Role: Providing crisis management, rehabilitation, and close monitoring

The choice of case management model depends on factors such as the client's needs, care setting, organizational structure, available resources, and the expertise of the case management team. Recognizing that individual clients and providers are unique, a blend of approaches across organizations could be adopted and respected within an integrated and collaborative HIV program.

I. KEY GAPS

Stressed Workforce – Providers described having to work in a constant state of crisis and expressed a range of emotions from passion and fulfillment to anger and burnout.

Resource Limitation – All providers emphasized limited or insufficient resources. Human resource limitations included recruitment, training, workload management, retention, long-standing vacancies, technology, transportation issues, limited clinical space, and limited resources for specialized needs.

Workload Management - Almost all providers described little to no balance in their workloads, with no effective mechanisms or resources to address such imbalances. The volume and complexity of client needs have starkly increased.

Access to Clients and Information—All providers noted difficulty getting the right information at the right time for their clients. Many described spending incredible amounts of time calling for information, reporting among organizations, locating clients, or accessing client information on their behalf.

Complicating the matter is a lack of a centralized database, protocols, or inventory for sharing information.

Lack of Clear and Consistent Vision and Plan – There is no common nor shared approach to HIV care across the province, with a perception that there is no clear priority to reduce infection rates, a lack of responsiveness in Public Health and their connection to provider groups.

J. LIMITATIONS

Some essential limitations exist within this evaluation. First, the lack of a single, cohesive, or integrated program for HIV care in Saskatoon is evident. As such, this review intended to provide recommendations and facilitate collaborative discussions on care planning and resource allocation across organizations and care sites in Saskatoon. This evaluation assessed the broad HIV care landscape in Saskatoon and did not conduct a critical review or audit of individual programs. As such, the data reported within this evaluation relied solely on the accurate reporting from participating organizations. A rigorous economic analysis of participating organizational outcome measurements, including social and clinical outcomes, would better inform responsive resource allocation and funding requirements. The reviewers used the HIV UNAIDS 95-95-95 as the global standard for HIV evaluation markers. However, evidence-based resourcing decisions cannot be made solely according to cascade outcomes, but also must consider clinical cohort size, complexity of need, social needs, and program specifics when determining adequate and required resourcing, and resource distribution.

Data saturation occurred quickly during the data collection processes, suggesting experiences and challenges of HIV care provision in Saskatoon are widely shared among providers and patient partners. The primary finding was the need for more cooperation and cohesion across programs. The reviewers observed consistent push/pull among the stakeholders and participants, whereby although the evaluation was needed, there was resistance to addressing system and program weaknesses. Although all the care programs and organizations are intrinsically linked and highly dependent upon each other, the differing philosophical approaches and care models across organizations created fundamental tensions. Resolving these differences and leveraging the organizations' strengths are required for HIV care improvement. Despite consistent efforts to collaborate and cooperate, resistance to change processes and the adaptation of approaches continued throughout and until the end of the evaluation.

Typical of evaluation studies, outcomes depend on the stakeholders' willingness to accept the recommendations, engage in strategic discussions, and implement necessary change processes resulting from the review. Some measurable changes were adopted during the evaluation, such as increased funding for case management and peer support. However, without ongoing dedication and commitment to enhancing care outcomes, reducing transmission rates, and (re)engaging those lost to follow-up, the required system, organizational, and program changes will not be achieved.

DISCUSSION OF EVALUATIVE QUESTIONS

UNAIDS identifies four primary factors responsible for the persistence of the HIV epidemic within regions: 1) lack of political commitment, 2) insufficient investment in prevention, 3) structural barriers to safeguard women and key populations, and 4) failure to systematically scale up proven programs (UNAIDS, 2018). All four factors were evident throughout the review of the system and HIV care pathways across Saskatoon. Based on the findings of the data analysis and plenary stakeholder consultation sessions, below are the results of the evaluative questions guiding this program review (WHO, 2013):

1. Are the right things being done?

The key service organizations (SHA, WSCC, Sanctum, STC) providing HIV care in Saskatoon all demonstrate strengths in their programs and services. Supported by primary care, community-based programs offer responsive care for key populations whose needs extend beyond the immediate medical and pharmacological. These targeted programs are better able to respond to priority patient populations. For instance, STC Health Center provides culturally responsive care in an open environment and offers highly accessible services. Sanctum Care Group includes a collection of support programs in the community and acute care settings that are designed to meet the specific needs of targeted patient groups (palliative, pregnancy, supportive housing, and intensive care coordination). SHA PLP offers outreach and specialized infectious disease care critical for patients with complex medical needs, co-infections, and acute care. SHA Public Health conducts surveillance, contact tracing, sexual health testing and education and provides direct reporting for system-level decision-making. Westside Community Clinic provides accessible primary care services within a community-based, integrated, team-based clinical care model.

What stands out about HIV care providers in Saskatoon is their passion and commitment to the patient population they share. The consultation groups shared the goal of better health outcomes for people at risk or living with HIV. This primary objective is clear. Unfortunately, the primary weakness in Saskatoon-based HIV care delivery is the lack of effective service cooperation and coordination required for an individual to access and receive the most appropriate care and services when and as needed. While the programs do collaborate to support and transition clients, HIV care in Saskatoon is delivered in a triage-like manner that provides care without an overarching strategy, evaluative markers, or coordinated efforts, combined with a perception that there is no clear provincial body or individual taking responsibility for HIV care outcomes. For example, while providers might come together to do rounds on the most ill among their clients (those with CD4 counts <200), the numbers of those with worsening conditions have become so high that the rounds no longer provide sufficient time to review all cases. Thus, despite data and reports that providers work together, there is clearly insufficient reach, capacity, and collaboration to provide care to reduce transmission rates.

Without empowered leadership, adequate policies, strategic plans, defined outcome targets, and sufficient resources, the collective action and specific strengths of the provider groups cannot be leveraged. Since provincial-level reporting is required for HIV, a provincial-level integrated program and reporting approach is clearly needed. Moreover, appropriate and culturally responsive interventions, guiding policies and standard procedures, a shared clinical pathway, and targeted resources are critical to delivering effective integrated and coordinated care.

2. Are things being done in the right way?

Whether acute care, primary/community-based care, intensive outreach, or culturally focused, the current care models work sufficiently for those individuals who have achieved viral suppression. However, gaps in care and support leave those most at risk of infection and transmission, as socio-economic and mental health complexities exacerbate barriers to accessing and remaining engaged in care. This population requires a nimble care model that can adapt readily to population needs as they shift, along with flexibility and cooperation among provider groups. One example of this need is in how substance use within key populations has shifted from cocaine to meth and fentanyl, requiring an urgent shift in treatment and harm reduction approaches.

HIV has become a complex chronic condition, requiring a paradigm shift and innovative approaches toward care - one that is delivered through effective coordination across primary care and specialist settings (Rolfe, et al., 2018). A 'systems approach' of an integrated care model is a well-established best practice for HIV care. In a meta-analysis conducted on healthcare service design and delivery, Komashie et al. (2021) provide clear evidence that a systems approach for HIV care significantly improves both patient and service outcomes. A shift towards chronic disease management and a team-based integrated care model moves care delivery from an emergency response and linear approach. In short, a circular, coordinated, and integrated health system approach is widely acknowledged as a more desirable approach to HIV cascade definitions (Assefa et al., 2020; Nicolau et al., 2022; Ehrenkranz et al., 2021).

Supported by the literature, the outcome findings of this program evaluation resulted in a solid case to establish a provincial HIV program aimed at managing and reducing HIV infection across the province. Central care coordination that operates across organizations and jurisdictions is an effective avenue demonstrated to provide integrated care and maintain centralized information. As a case reportable infection, HIV requires public health monitoring and prioritization. Investment in Public Health operations specifically to manage and reduce HIV infections maintains and pursues the responsibility and surveillance of HIV under the responsibility of the *Public Health Act* of Canada.

Investing in a centralized and provincial-wide program is positioned to establish a shared knowledge base and standardized metrics that can generate ongoing and regular cascade monitoring and sustainable outcomes. A shared data source can advance accountabilities and support evaluations of gaps, duplications, and strengths across organizations and sites. Learning from the HIV collaborative group, an intersectional approach with a central coordinator and empowered leadership can identify key factors required for effective coordination across provincial jurisdictions. The investment in a provincial program for HIV care coordination, monitoring, and evaluation is a central and critical component of addressing HIV rates in SK.

All successful HIV care models share a crucial feature: systemic elements working together to produce results not otherwise achievable by any one unit alone, with every participating unit acknowledging its dependence and influence on every other unit (Clarkson et al., 2018). Increased structured communication and collaboration across organizations and sectors will provide better patient-centred and culturally responsive care. Partnership models and inclusive planning will be required to provide integrated services and shared accountabilities. Adequate governance, co-management, and coordination processes are necessary to flow people and resources efficiently. Providing comprehensive services for people living with HIV, regardless of the care environment, requires team-

based collaborative care, integrating essential services into a care point using a structured process to deliver services (Clarkson, 2018). Restructuring the current HIV delivery model and approach will require political, policymaker, and provider commitment, increased and sustainable funding and increased effort toward strengthening health systems across all agencies and provider organizations.

3. Are the right people being reached?

An alarming proportion of people diagnosed with HIV in Saskatoon are not engaged in care, perpetuating the ongoing risk of transmission and spread of the virus within the community. At present, the mandate of HIV is "*lumped in"* with other public and primary care mandates, reportedly leaving it "*lost in the shuffle."*While providing HIV through an integrated primary care model is proven effective and demonstrates strength in care outcomes in Saskatoon, establishing HIV and STBBIs as a separate or prioritized program is critical to receive the appropriate focus and resources required to address and reduce rates. Equally, reports of ineffective or disjointed SHA program management and oversight and managerial absenteeism that emerged during the evaluation contribute to HIV care not being adequately prioritized or resourced. Improving the locating and linking of those with HIV into care while supporting prevention and treatment adherence requires a more robust system approach, including intensive case management and the adoption of innovative interventions for better reach and response. All stakeholders identified a need for more effective and engaged leadership that prioritizes HIV, with the authority to make high-level decisions about resources, programming, and policy directions. This prioritized approach will enable teams to address gaps, particularly related to linkage to care.

HIV is widely considered a complex chronic condition that can be managed in primary care settings while requiring integrated and coordinated care models that promote collaboration between primary and specialized care, allied services, and service organizations. In addition to the increasing medical complexity of this patient population, the HIV population in Saskatoon also struggles with meeting basic needs. It faces multiple challenges with social and structural determinants of health-related to systemic racism, stigma, transportation, food insecurity, and housing affordability. Open-access care, integrating care services with primary care, outreach, and case management, and partnering with community-based organizations that deliver a package of interventions (e.g., financial incentives, intensive case management, transitional care, and enhanced outreach) have proven to be highly effective locally and among people elsewhere experiencing similar challenges (Audain et al., 2011). Much of what providers do and how they do it in Saskatoon strive to deliver this mode of care but still face challenges, specifically: 1) uneven allocation of financial resources based on patient loads, 2) uncooperative relationships across care sites, 3) inaccessibility and unsuitability of care for clients, particularly those lost to follow-up. In a systematic review of HIV care models, Kendall et al. (2019) report that continuous, team-based, and cooperative relationships had the highest outcome scores across all variables. Redesigning HIV treatment and care to support better team-based, coordinated, and integrated care for chronic disease management is needed to shift the care model and resource allocation structure that is based on patient loads and complexity.

Clemenzi-Allen et al. (2020) found that case managers and outreach workers, along with peer support workers and individuals with similar sociodemographic characteristics, demonstrate efficacy in improving retention in care among people with living HIV/AIDS and for prevention strategies (Spaulding, 2018; Thompson, 2012; Kushel, 2012, Katz, 2001). The primary challenge in implementing coordinated and integrated HIV care services across organizations in Saskatoon is

related to issues surrounding privacy and consent processes that are required to establish care coordination and information sharing. It is critical to resolve the problems associated with gaining general consent for services by implementing an opt-out approach to the consent process and using shared consent forms across organizations to establish services available throughout the system.

Relationships are essential in coordinated care, confidentiality, and shared consent processes. Most of the factors reported contributing to the success of systems and change of practice, implementations, and interventions are strongly related to people and their relationships (Komashie, 2021; Clarkson, 2018; Kendall, 2018; Reid, 2005). Shared relational-centered care approaches (e.g., trauma-informed, women-centred, gender-affirming, and culturally responsive care) promote quality relationships between patients, people, and providers that are nurtured through norms of mutual trust and respect. Saskatoon will see better patient outcomes with strengthened relationships across HIV care providers who work towards better integration of services and better working relationships across sites. There is unspoken and spoken discontentment and mistrust across service organizations in Saskatoon. Increased opportunities to strengthen relationships and avenues for supportive discussions to overcome challenges and conflicts across organizations are required. Leveraging the strengths of provider organizations and reducing the territorial and transparency tensions between organizations and individuals is critical for better care outcomes. These tensions demonstratively interrupt and disrupt care, creating additional barriers and redundancies for people to access care across the spectrum of support. Collectively following an agreed-upon and shared HIV care pathway can support communication and care flow across care organizations within an open-access model and serve as a platform for relationship strengthening.

Patient-generated data is also an essential source of feedback that provides a better understanding of the lived experiences of people living with or at risk for HIV. An emerging field of work establishes peer support workers and people with lived experiences as part of the information exchange system, providing valuable insights into lived realities for care providers while encouraging empowerment and self-determination among people living with HIV (Hewitt, 2021 et al.). A peer support network of paid workers is largely missing from the HIV care teams and within clinical rounds. Developing relationships and paid time for patient partners and peer support workers is an important missing perspective and resource that is accessible and valued within patient communities. Supporting peer support workers in this role and within potentially triggering environments is critical to this approach. The support of another person with similar lived experiences is a responsive way to provide safe and supported care when engaging with the health system, particularly for those not engaged in care and/or lost to follow-up.

4. Is the program making a difference?

While dedicated and passionate providers offer HIV care in a variety of approaches in Saskatoon, the programs are limited by insufficient, uneven, and inconsistent resourcing between sites. Overall, the demand for care and social support is higher than the funding available to support the needs of those at risk or living with HIV in Saskatoon. Essentially, funding is not allocated according to clinical demand and the complexity of care needs. For instance, WSCC has shown to be effective in engaging and providing clinical care to over half the Saskatoon HIV population; however, it relies on partnerships and shared resources with other agencies, which ultimately increases the demands on the clinic without dedicated funding or planning to address these increasing demands. Insufficient resources ultimately result in organizations diverting or competing over resources. This competitive environment creates a situation that promotes poor cooperation, lateral violence, and workplace stress. Exhaustion,

burnout, and high turnover were widely expressed among the frontline providers. Although not necessarily across all organizations and programs, workload burden is widely evidenced and often results in limited, inconsistent, short-term, and interrupted services that underserve the HIV/AIDS patient population. The mental and moral burden placed on care providers cannot be underestimated.

Due to the high rates of risk and infection in hard-to-reach groups, improved information exchange and data sharing are required to improve outcomes and coordinate services. Data-sharing interventions that rely on surveillance and electronic clinical data are widely shown to be highly effective for sharing information between medical and social care providers (Zamudio-Haas, et al., 2019; Hague et al., 2017; Herwehe et al., 2012). Integrated surveillance datasets at both a city and provincial level need to better identify people active/inactive in their care and, therefore, facilitate future engagement and linkage to care. This adaptive strategy, however, will require a fundamental change of practice, including the commitment to data reporting and shared accountabilities, the determination of comparable cascade definitions shared across organizations, and reimagining policies and processes of knowledge sharing and exchange.

Participant feedback throughout the evaluation identified that data sharing, standardized collection, and accountable reporting are top priorities for better HIV care in Saskatoon. Establishing a centralized database and/or formal agreement for sharing patient-level information across organizations, while protecting privacy and safeguarding harm, will benefit the social and health care systems. While this centralized database may require intensive coordination and investment, efforts to enhance accountabilities, share metrics, and establish common cascade definitions are urgently needed for sustainable change. The first step is establishing a multi-service consent process to allow data sharing between providers. From this enhanced data and information sharing, service and care coordination can be streamlined, freeing up time and workload for providers to serve more clients and improved data management. Moreover, shared reporting results in transparent measures and facilitates better-informed and accountable decision-making (Hewitt, 2021; Towe et al., 2019; Maiorana, et al. 2012).

5. Are the services being done on a large enough scale?

In Saskatoon, the complexity of needs and demand for care far exceeds the supply and capacity of care providers and support services. This deficiency is the undercurrent of the challenges in providing required care to those in need. There is no set marker for 'sufficient funding' as service costs and programming needs vary considerably between countries and regions. However, there are instances where funding decisions with long-term investment commitments are shown to reduce additional future costs of growing patient numbers and care complexities, as seen in British Columbia (Nosyk et al., 2015) and recent dedicated funding in Manitoba (https://mbhiv.ca/). Additionally, care models must be offered along a continuum of care, tailored for specific patient populations (e.g., Indigenous, addictions, gender-affirming, women, MSM, and newcomer/ ethnocultural minority groups), with specific attention given to transitions along this continuum. Adapting HIV care approaches must be informed by patient partners to adequately understand and address their unique barriers to accessing care.

Plenary Session results underscored the need for basic needs, particularly housing. Intersectoral or multisectoral collaboration among ministerial services is critical for providing supportive care and strengthening partnerships to establish and maintain long-term sustainable funding across programmatic and provincial budgets. Findings from a systematic review demonstrated a significant

decrease in costs and statistically significant improvement in health outcomes associated with integrated care models compared to traditional care models, with sustained results over 12 months (Rocks et al., 2020). The lack of secure, stable, adequate housing is well understood as a significant barrier to engaging many in consistent HIV care (Arum, et al., 2021; Clemenzi-Allen et al., 2020; Aidala et al., 2016; Leaver et al., 2007). Policies, such as Housing First, are acknowledged as best practice to assist persons with multiple complex needs (Riley, et al., 2019). This approach has been included in public health budgets across Canada when redesigning processes to improve care delivery and reduce costs (Baxter et al., 2019; Sharpe et al., 2018; Katz et al., 2017). Furthermore, a substantial multi-sectional investment has been provided to Sanctum Care Group, demonstrating a proof of concept. A health economic analysis of these programs based on funding, client profile, capacity, and outcomes is warranted to identify areas of strength and means of cost savings of the support programs and the impact on intersectional services, such as income assistance, justice services, emergency services, family social services, food security, housing, and harm reduction.

The lack of publicly and consistently reported data and the challenge of capturing measurable outcomes for support services, such as outreach and case management, are significant barriers to assessing the impact of the work on reducing viral loads and informing meaningful adaptations to programs and services. Accountability for outcomes must also be assigned and upheld. These issues could be remedied by establishing a co-developed and comprehensive HIV strategy accompanied by standardized metrics, definitions and scope for case managers, outreach workers, and shared care, with care pathways for key care populations (e.g., Stable, Pregnant, non-Stable) to support integrated coordinated care across sites. This consensus-based process worked to visualize how and where care intersects across organizations and where gaps occur in the patient experiences in care. The care pathways (Figures 7 & 8) also provide clear information to guide patients and providers throughout the care landscape. The key challenges for implementing the care pathways are coordination, communication, and knowledge sharing.

A communication strategy, including resource documents, action plans, and clinical pathway models, was developed to support provider and stakeholder advocacy, support information requests, and collective implementation of the review recommendations and capitalize on the momentum the review has prompted. A copy of these resources and documents can be found on the Saskatchewan Infectious Disease Care Network website (sidcn.ca).

CONCLUSION

This HIV program evaluation sought to provide a comprehensive picture of the HIV/AIDS care landscape in Saskatoon, SK. The review process brought together relevant stakeholders across ministerial, health authorities, Indigenous and community organizations, provider groups and people living with HIV to validate findings and prioritize the next steps and subsequent plans to achieve UNAIDS 95-95-95. However, the evaluation was complex as there was not a single HIV program but multiple programs and various services providing HIV care in Saskatoon that were not formally coordinated or integrated.

The evaluation identified the urgent need for a cohesive HIV provincial strategy, dedicated responsive funding, improved data sharing, better coordination and cooperation, and more access to basic needs and HIV peer support. Findings at each phase of the evaluation identified ways to support implementing recommendations and closing the gaps in care. Participating stakeholders and informants are critical to the HIV continuum of care. However, implementing the review recommendations and adapting system processes will rely on collaborative leadership and active and dedicated cooperation between the ministry, health authority, Indigenous leadership, and provider agencies to adapt and implement required changes in a committed, timely, and sustainable manner.

The evaluation highlighted that, while the HIV care system in Saskatoon is functioning, the relationships between providers and across organizations are strained. Resources are not appropriately allocated according to patient loads, care complexity, and clinical outcomes. In general, SHA/PLP is improving the cascade outcomes and has developed partnerships with key community organizations. However, the SHA receives the bulk of the HIV resources, and the lack of a strategic plan, cooperation and collaborative decision-making regarding resource sharing and integrated processes limits the potential impact of the SHA programs and services. Sanctum reports good care outcomes from its intensive care programs, supported by the required resourcing and partnerships. The Sanctum model demonstrates that social and health outcomes can be achieved with adequate funding. WSCC is the primary site for HIV care and coordination in Saskatoon and reports reasonable cascade outcomes, given the patient population's size, complexity, and acuity. WSCC is a central provider and partner in the HIV care landscape. However, despite providing the majority of HIV care, the clinic is operating at over capacity, with a total cohort of 17,000+ patients (HIV and non-HIV) (WSCC, 2024) yet has no targeted HIV funding. As a critical clinical partner in the HIV care ecosystem, WSCC provides an unsustainable level of in-kind resourcing and clinical services that are required for an integrated approach to HIV care in Saskatoon. STC continues to respond to the patient population with high levels of engagement and retention, operating with marginal funding. The cultural support and community connectivity offered by STC could be better recognized and leveraged.

Promoting ongoing and iterative co-design of implementation strategies to include frontline providers and people living with HIV will support ongoing improvement, reduce potential funding waste, and facilitate more flexibility to meet shifting needs as they arise. However, in alignment with UNAIDS (2018), the HIV epidemic persists across Saskatchewan because of 1) the lack of pollical commitment, 2) insufficient focus on prevention, 3) structural barriers to safeguard women and key populations, and 4) failure to systematically scale up proven programs. Leveraging the strengths of provider agencies, implementing recommendations, and using the collaboratively designed 'ideal future state' vision for an HIV care ecosystem can guide providers, funders, and policymakers to transform HIV care, close outcome gaps, and improve care delivery for those at-risk or living with HIV in Saskatoon and across the province.

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SUPPLEMENTARY MATERIAL

APPENDIX 1.0: NATIONAL HIV PROGRAMS AND STRATEGIES

National
Canadian Institutes of Health Research (CIHR) HIV/AIDS Strategic Plan (2022-2027)

Canadian Institutes of Health Research (CIHR) HIV/AIDS Research Initiative: Strategic Plan 2015-2020

Public Health Agency of Canada (PHAC, 2018): Canada's Framework for Action, Reducing the Health Impact of Sexually Transmitted Blood-Borne Illnesses in Canada by 2030: A Pan-Canadian STBBI Framework for Action

Reach Nexus - national research group on HIV, HCV and other STBBIs in Canada

CATIE – a national informational resource for HIV and HCV

British Columbia
Treatment as Prevention (TasP) Strategy – Strategy pioneered by the BC Centre for Excellence in HIV & AIDS that provides widespread testing and immediate access to ART. It has decreased deaths by 95% and transmission by 66% in BC. The strategy was so effective, that the HIV ward in Vancouver was repurposed due to such a dramatic decrease in transmission rates and HIV/AIDS prevalence. TasP provided the foundation for the UNAIDS 2030 HIV/AIDS Elimination Plan.

BC Centre for Excellence in HIV & AIDS - Publish therapeutic guidelines and primary care guidelines for HIV
BC primary care guidelines for the management of HIV - Published November 2022

Alberta
Alberta HIV Plan to 2021

Saskatchewan
SK HIV collaborative - Formed in 2015 to provide strategic guidance to the implementation of HIV coordination and support
SK HIV Collaborative Work Plan 2017-2020

Manitoba
Manitoba HIV Program
Manitoba Provincial HIV/AIDS Strategy
HIV Program Report 2018-2021 - Published Dec 1, 2022
Collective Impact Network - Partners: Nine Circles Community Health Centre; 7th Street Access Centre; Health sciences Centre Winnipeg; MB HIV referral line

Ontario
Ontario HIV strategy 2021-26
Ontario Advisory Committee on HIV/AIDS (OACHA) - Collaboration across ministries and organizations for work impacted by HIV
Ontario HIV Epidemiology and Surveillance Initiative - Publishing annual progress and trend reporting on HIV in Ontario since 2016
Ontario HIV testing, PrEP and PeP guidelines (2019) for HIV, HBV, HCV and STBBIs
Ontario Ministry of Health protocol on Sexual Health and Sexually Transmitted/ Blood-Borne Infections Prevention and Control (2019)

Quebec
AIDS Community Center Montreal (ACCM)
Quebec AIDS Foundation
Cercle Orange - Free referral service in Montreal to access HIV health services

Indigenous health and HIV/AIDS care in Canada
Canadian Aboriginal AIDS Network (CAAN)
All Nations Hope Network (SK)

Healing our Spirit Society (BC)
Feather of Hope Society (AB)
Manitoba Aboriginal AIDS Task Force (MB)
Healing our Nations (NS)
National Indian and Inuit Community Health Representative Organization (NIICHRO)
National Collaborating Centre for Indigenous Health
Canadian AIDS Society (CAS)
Indigenous People living with HIV & AIDS (IPHA) Caucus
Indigenous Women's Leadership (Voices of Women - VOW
Indigenous Men's Leadership Project
International Indigenous HIV Start Plan 2018-2024

APPENDIX 2.0: ACTION ITEMS FOLLOWING THE PLENARY SESSION

Action Item	
Develop and issue a joint press release from these participating organizations on world AIDS Day (Dec 1) (some may need more approvals) – word in such a ways to: a) position SHA and STC as partners, b) highlight that we're doing good work c) acknowledge that there is a problem with HIV rates in SK but we're committed to working on improving them	
Develop a communications plan for next 90 days so organizations can proactively contribute to the messaging and dissemination	
Develop draft summary and a series of 1-pgrs (tailored to Health, Mental Health, Justice, STC) of this work.	
Create a mechanism to share outcomes and signal intention with this work at SHA & NITHA (via Coordinator monthly meetings), CD community of practice (via Pam DeBruin), STBBI provincial committee (via John Mark O and Jacquie K), and others (e.g., meetings stakeholder organizations have with relevant ministers)	
Develop the specific 'asks' or recommendations (short, medium, long) needed and gain consensus for how to approach items flagged for future needs.	
Gather more Indigenous / cohort specific data	
Inform the advisory group about details regarding HIV within the current ask from SHA Saskatoon Primary Health team (including Mental Health and Addictions/Maternal if there are any other asks related to HIV or Housing that might advance the work discussed in this meeting).	
Share overview of a "fast tracked city" requirements, benefits for funding, and how to align to homelessness and addictions to the framework.	
Work on ER bloodwork process	
Ask industry to fund a series of HIV-specific organizational "learning tradeshows" to share what each organization offers: • Outputs: recorded 'videos' of each session plus organizational chart, a high-level process map, and a one-page take-away summary • Audience is: a selection of team members from each Sanctum, STC, SHA SSAR, PHR, PLWA, PLP, WSCC, SSHC, OAT, Crisis, Wellness Wheel. • Events themed (start Sanctum, STC, PHR, WSCC, SSAR, then move medical, social, etc.)	
Jacquie K and John Mark O to share the current list of stakeholders for the Provincial STBBI Committee and HIV Collaborative. Satchan T to send the Advisory Group's recommendations for additional members.	
Steering Committee to review "fast track city" model to determine if viable for Saskatoon.	
HIV Improvement team will develop an updated and comprehensive process map – use the initial org charts and maps offered in the "learning tradeshows" to conduct current and future state mapping (with both provider and peer lens streamed by demographics e.g., low CD4, pregnant, etc. also prevention, etc.) Plus, the team will identify organizational profiles (who does what well) and offer role definition where possible.	
Identify criteria and triggers for and transfer points plus gaps/starbursts for areas of improvement and ID areas for communication.	
Convene data team to develop a data plan involving key "data leads" (PLP-ID, Westside, Sanctum) to work on: - definitions, - cohort data gathering, - intervention alignment.	
Coordinate the invitation for an intersectoral (ministries, housing, addictions and mental health, city, etc.) group meeting with members of the Advisory Group to explore what it would take to implement a "fast tracked city" pitch for Saskatoon.	

APPENDIX 3.0: PRIORITIZED AREAS AND RESPECTIVE ACTIONS/STRATEGIES

1. Provincial Coordination & Accountability improvement recommendations:
   i. Provincial data coordination, standardization, trusted baseline and reporting (including economic impact) is the primary need and should drive all decisions related to resource and care processes. Outcome metrics to establish baseline, measure at intake, 3mos, 6mos and 16mos and focus on viral load and ARV engagement rates.
   ii. Implement a YXE supervisory table to collect, report and analyse the data and outcomes and equitably allocate the resources based on this evidence.
   iii. Hold the province accountable to in turn support and hold agencies and patients accountable to meeting the 95-95-95 targets.
   iv. Re-invest in prevention and education along with effective and data-driven harm reduction initiatives and alignment to mental health and addiction targets and approaches.
   v. Implement province-wide standards and approaches to address social determinants of health starting with rapid access to housing for HIV+ individuals.

2. Centralized and Outcome-driven Saskatoon HIV services improvement recommendations:
   i. Implement a provincial prevention and awareness approach.
   ii. Improve alignment between testing and diagnosis to reduce LTFU at this milestone and rapidly triage to engage into care.
   iii. Implement a shared and effective consent process at point of notification with opt-out versus opt-in.
   iv. Implement shared patient data and shared metrics.
   v. Implement standardized training, messaging, definitions and metrics across agencies.
   vi. Engage First Nation care teams and Nations to develop a provincial care pathway.

3. Multi-agency consent process that enables effective linkage to care and reduces/ eliminates Lost-to-Follow-up improvement recommendations.
   i. Work with all agencies and Public Health to implement a shared consent process (and form) at the point of notification (or point of release from corrections).
   ii. Change the consent process to be opt-out versus opt-in and extend expiration beyond one-year.
   iii. Shared consent process and form to represent all key agencies involved in care or in re-engagement for those LTFU.

4. Relationship-building across agencies and services areas improvement recommendations:
   i. Standardize HIV care processes across Saskatoon (and Saskatchewan).
   ii. Implement an active and accountable provincial HIV Program Committee comprised of government, agency and front-line representatives to create and monitor shared metrics (e.g., 95-95-95 and reduction in LTFU), a framework and standards of care, and general orientation and information sharing.
   iii. Implement an improved and centralized YXE notification and referral process.

5. Process for effective and responsive Case Managers/Outreach Workers distribution/allocation improvement recommendations:
   iv. 1-2 Case Managers (CM) dedicated to all Saskatoon newly diagnosed (paired up with Peer supports).
   v. Develop a shared hand-off process from HIV program providers/organizations.
   vi. 1-2 Outreach Workers (OW) dedicated to Lost-to-Follow-up (LTFU) that implement a shared approach (with Public Health) to demographical locating (demo) with consideration for how to effectively and ethically use social media.
   vii. Implement an inter-agency database for HIV + patients.
   viii. Implement a mass Saskatoon Alternate Care Plan (ACP) team (1-2 CMs and OWs) and program with consent to permit effective engagement and re-engagement.

ix. Develop a rapid access to housing process for HIV+ needing treatment.

6. Effective & efficient intake placement process improvement recommendations:
Implement the intake process (figure below) featuring:

i. A "Master Coordinator" who works alongside Public Health for all newly diagnosed to ensure effective education and referral to the appropriate agency program.
ii. Implement a multi-agency database and effective consent form.
iii. Ensure Case Managers and Outreach Workers can work evenings and weekends to best serve the population.

APPENDIX 4.0: HIV CARE ECOSYSTEM GAPS AND AREAS OF REWORK IDENTIFIED THROUGH THE PROCESS MAPPING EXERCISES

Lack of accountability and leadership

- Lack of a clear and consistent vision and plan
- Last most-responsible-provider not made aware of Lost-to-Follow-up
- No provincial monitoring, standards or outcome metrics to address Lost-to-Follow-up

Lack of standards and coordination among providers regarding:

- Centralized coordination and capacity-building
- Cross-organizational sharing and collaboration
- Proactive staffing and training
- Standardized metrics and shared data
- Patient services (e.g., translation)
- Standard prevention education
- Care after discharge from corrections resulting in Lost-to-Follow-up
- Shared processes to mitigate care transition when staff turnover occurs
- Resources to integrate CBO services into the HIV continuum of care (for improved access)
- Peer and family supports and access to them
- No multi-disciplinary approach to intake, triage and referral

Linkage and Referral process

- Lack of alignment between patient-choice philosophy and public health reporting/viral suppression goals
- Referral form does not enable referrals to NPs
- Referrals to social work is not direct and prevents triaging to preserve CM capacity for complex patients
- No clear referral process for rural and new Canadians

Consent

- No existing process to re-offer shared consent options
- Considerations needed to match TB consent protocols
- Consent is offered too late in the continuum to offer full scope of services for rapid treatment
- Consent process is not sufficient to address Lost-to-Follow-up issues

Re-engagement in care (New diagnosis and Lost-to-follow-up (LTF)

- No services or options when patient engagement is declining
- No step-up and step-down options to re-enter HIV continuum midway or to address social needs

Systematic trauma, racism, and fractured relationships

- Stigma and racism and non-culturally competent care throughout continuum
- Lack of effective and trusted connections to and from First Nations community clinics

Resource and Service Limitations regarding

- Yearly Public Health review and create "LTF" list (significant backlog is growing)
- Supports available for cognitive, addictions and mental health supports
- Peer and family supports throughout continuum
- Access to prevention/harm reduction tools

Processes

- Clients choose where to access CM but no formal procedure to allocate resources accordingly
- No formal process to support and engage trained primary care physicians to administer ARVs
- Lack of effective communication regarding transition to and from pediatric programs

Data reporting and communication among providers and with Public Health:

- Hospital ("Duo") stats not provided to Public Health
- Public Health notification duplication when qualified provider can provide needed information

APPENDIX 5.0: PROGRAM REVIEW METHODOLOGY

This four-phase review was guided by the World Health Organization's (WHO) *Guide to Conducting Program Reviews for the Health Sector Response to HIV/AIDS* (WHO, 2013). Accordingly, mixed methods and participatory approaches were used for the review design and data collection. Mixed methods are a recognized and validated research methodology often employed in public health and organizational improvement arenas (Creswell, 2004; Bastian, 2016). Both quantitative (clinical data) and qualitative (descriptive) data were gathered, leveraging both datasets to provide a comprehensive understanding of patient outcomes and the gaps in care. Conclusions drawn from both datasets were validated by stakeholders to increase the rigour, clarity, and transparency of subsequent results.

Participatory methods utilized input from an advisory group of providers, organization and government administrators, and care providers and consultations with people living with HIV to guide and inform the evaluation. Deliberative dialogue (Boyko 2012) was used during the plenary sessions. Deliberative dialogue is a validated participatory method used in health care and policymaking that brings together diverse stakeholders (community members, policymakers, service providers, people with lived expertise, researchers, and organization representatives) to collectively review research evidence, validate findings, and utilize the evidence to inform and co-design policies, strategies, and programs.

Data Collection

Phases 1 & 2 – Stakeholder discussions, literature and scoping reviews, interim recommendations

Quantitative data comprises clinical data extracted from the electronic medical records at the Positive Living Program (PLP) and the Westside Community Clinic (WSCC) clinics between May 1, 2018 and April 30, 2024. Cascade data from Sanctum Care Group was provided by the program director along with their definitions after the interim report and were integrated into this report and its findings. The data includes demographic statistics and the cascade of care outcomes for the two primary HIV programs in Saskatoon and the community-based care site (Appendix 4.0). The HIV cascade of care measures are used as benchmark outcome markers. Quantitative data were gathered through a retrospective chart review from the PLP and WSCC. Patient age, biological sex, HIV risk factors, laboratory results, appointment data, and treatment history were analyzed and reported to characterize the HIV care cascade for Saskatoon and the HIV target markers. Rates of diagnosis, engagement in care, ARV treatment, and viral suppression were analyzed annually and trends were captured.

Qualitative data was gathered using multiple methods, including focus groups and sharing circles, stakeholder interviews with key informants, consultations with patient partners, organizational audits, environmental scan of current HIV/AIDS strategies and policies across Canada, and a literature review of published evidence (Table 1). Key stakeholders were identified by the advisory group, to ensure all relevant organizations and care providers were included in the review to maximize the breadth and scope of perspectives and responsibilities within the HIV care delivery continuum. Stakeholder informants included program directors and managers, supervisors, case managers, nursing staff, outreach workers, individuals responsible for decision-making, pharmacy, social work, mental health, infectious disease specialists, clinical providers and administrators, and people living with HIV in Saskatoon.

Focus group and sharing circle results, stakeholder interviews, and consultative insights were collated, and thematically coded to assess barriers, facilitators, and recommendations. Organizational audits and site visits were conducted to ethnographically understand how services are delivered and to determine the capacity of organizations to meet the demand and offer required services. The environmental scan of HIV/AIDS strategies and policies informed trends across other provinces and territories, providing evidence and guidance for the next steps and recommendations. An environmental scan and literature review guided to the interpretation of findings and informed the recommendations.

Qualitative data collected through focus groups were collected during a day-long session in January 2023 with 36 frontline care providers (nursing, pharmacy, outreach, case management, and support staff). The session invited insights from participants on activities, processes operating within HIV care in Saskatoon, roles, experiences providing HIV care, and identification of roadblocks and opportunities for improvement. Breakout sessions by provider groups - Case Management, Outreach, Pharmacy, and Nursing - were conducted. Each respective group was asked to map current workflow processes and identify where gaps exist in the HIV cascade of care that require attention and improvement (Appendix 5 and Appendix 6).

Individual semi-structured interviews were used to gather information from key stakeholders. Stakeholders included six (6) health system administrators; four (4) nurses/ frontline providers; six (6) clinical leads involved directly with HIV care provision in Saskatoon; three (3) external stakeholders outside of care provision in Saskatoon; two (2) patient partners; and ten (10) people who receive HIV care in Saskatoon. Interviews were conducted from February to June 2023 virtually or in person and were recorded and transcribed with verbal consent. Recorded interviews, notes, and transcripts were analyzed, coded, and colligated into a master dataset. Sharing circles (7) and personal interviews (3) with people living with HIV were conducted by patient partner consultants. Sessions were audio recorded, transcribed, and coded for themes.

Thematic analysis was conducted to identify 'barriers', 'facilitators', 'opportunities', and 'recommendations' for improvement. Themes were tabulated to identify the most frequent to least frequent theme within categories. Themes were compiled, compared, combined, and validated by the advisory group. Themes underwent a secondary analysis of coding and collating to elicit root causes and contextual details. All interviews were analyzed in their entirety, despite achieving early data saturation. Analysis of transcripts continued to ensure no new themes were found. Recurring themes emerged across all stakeholder groups. Key findings are reflected in the root cause analysis (Table 6).

Organizational Audits and Resource Allocation

Key provider agencies for HIV care and services in Saskatoon were identified and represented within the advisory group, including the Saskatoon/Westside Community Clinic (primary care); Saskatchewan Health Authority (Public Health; Positive Living Program specialized care); Sanctum Care Group (community-based care); and Saskatoon Tribal Council Wellness Center (culturally responsive care). Budget analysis is continuing and ongoing to determine appropriate resourcing (funding, staffing, clinical space, technology, etc.) allocation according to clinical patient loads, complexity of care needs, and measured patient outcomes. Overall annual funding for HIV across the province from 2010-2019 is presented in Table 2.

PHASE 1 & 2 DATA SOURCES		
External Stakeholder	Physician expert with clinical insight in SK (n=1) Industry partner with established knowledge of HIV in SK (n=1) National Health System leader with background on HIV in SK (n=1)	
Local Stakeholder	Front line staff and providers (n=36) One-on-One interviews with administrators, clinical leads, and clinicians (n=6) Physicians (n=6)	Program/clinical managers) (n=6) Leadership (policy makers, directors) (n=6) Patient Partners (n=2) PLWH (n=10)
Organizational Audits/ Environmental Scan	Positive Living Program (SHA) Public Health (SHA) Westside Community Clinic (SCC)	Saskatoon Tribal Council Wellness Center (STC) Sanctum Care Group (NGO)
Programs and Policies	Positive Living Program (PLP) Public Health Surveillance and Case Management (SHA) Westside Community Clinic (WSCC) Sanctum Care Group (NGO)	HIV/AIDS Response Team (HART) Pregnancy Outreach Response Team (PORT) Refugee Clinic (REACH) National care models, policies, and strategies (Appendix 1.0)
Clinical Data (EMR, clinical outcomes)	Positive Living Program (PLP) Westside Community Clinic (WSCC)	Sanctum Care Group (NGO)

Phase 3 – Co-develop a shared future vision with stakeholders at Plenary Session

Phase 3 brought a broad group of stakeholders (n=38) together to discuss the results and findings collected through *Phases 1* and *2*, and collaboratively discuss and develop the next steps. The plenary session was held over two days in the fall of 2023, using a hybrid in-person/virtual format to accommodate stakeholders unable to attend in person in Saskatoon. Day One involved sessions for small group work, presentations from peer support workers, broader discussions that finalized the validated findings, co-designed a common ideal future state of HIV care in Saskatoon and established a prioritized list of action items intending to reach the UNAIDS 95-95-95 targets. Participants were asked to identify their ideal 'vision' five years in the future for each step along the cascade of care (prevention, diagnosis, linked to care, on ART, retained in care and virally suppressed. Using large poster board-sized paper to record their responses, participant responses were then collated, summarized and presented to the group for review to identify what actions could/should be taken to fill gaps, reduce barriers and reach the 'ideal future state' of each cascade step. Day Two defined the key messages and prioritized action items, according to short-, medium- and long-term timelines to move towards the 'ideal future' that was established on Day One.

Method: The two-day plenary session utilized deliberative dialogue and small group work approaches to identify a shared vision for the future state of HIV care in Saskatoon, discuss and validate key priorities, and express realities and potential solutions that would improve working in HIV care. The hybrid session offered participants to join in-person and virtually via Zoom. Small group discussions and interaction with the online participants was facilitated by a moderator and was periodically checked on by the facilitation leads to ensure fluid constructive discussion amongst the entire group.

Day 1 began with the peer support workers speaking about their experience living with HIV and what is needed to improve care. Following this frame of perspective of the patient partners, participants

worked in small groups to identify an ideal state for the HIV care cascade in 5 years to meet the 95-95-95 goals in Saskatoon. Five large paper sheets with headings reflecting five themes ('Strategy & Infrastructure'; 'Data, Measurement & Reporting'; 'Care Design & Delivery'; 'People & Capacity'; and 'Levers for Success') were placed around the room and participants were asked to note the ideal state for each theme. 'Levers for Success' highlighted strengths and components in place that could be leveraged to facilitate the ideal state and reach the 95-95-95 targets. A facilitator led the online group to discuss each of the 5 topics. The facilitation leads reported the results of the group work and summarized the findings, which they presented on Day 2 as a starting point for the final steps of future state planning.

A multi-step process was set out across the two days to achieve a comprehensive strategy with well-articulated and measurable action items in the following months. Three sessions on Day 1 resulted in:

1. Identifying the vision of the ideal future of HIV care in Saskatoon.
2. Validating key insights/themes from the initial report to be considered for each step in the care cascade.
3. Prioritizing objectives and identify the top 3 key activities needed to achieve them (including timelines, enablers and leads where possible)

A summary of Day 1 was provided, and results were summarized Day 2 as a primer for the group, where participants:

1. Defined the key system-level messages/recommendations needed to implement the defined actions defined on Day 1;
2. Identified the next steps and developed a plan to address the advancement of an action plan over the months following, including resource requirements.

Phase 4 – Implementation, Action Plan and Final Reporting

Following the stakeholder plenary session, immediate actions were taken to improve public awareness and address actionable items that could be easily completed or identified by the group as 'low-hanging fruit'. A press release was co-developed with the consultant team and advisory group and released on December 1st, 2023 – World AIDS Day. A communications specialist was added to the consultant team to help develop communication collateral and strategies for improved HIV awareness and messaging following the review's end date. Provider tradeshows were held where organizations presented their service offerings and care pathways to a broader provider group comprised of frontline workers and program managers from community organizations and clinical care services to increase the collective awareness of other organizational offerings and inform the care services mapping processes aimed to improve coordination, shared services, and streamline linkage to care processes for clients.

Pathway Process Mapping:

Following the directives from organizational presentations, care pathway process mapping sessions took place in Spring 2024, bringing together care providers and program administrators involved in providing HIV-related care in Saskatoon. Care pathways were presented from the intake to viral suppression and ongoing engagement in care for individuals, including processes for re-engaging clients with complex care needs. The sessions began with a review of the proposed ideal state and key priority areas identified during previous stakeholder sessions. The participants were grouped to

discuss the ideal state related to their respective priority areas and develop a set of recommendations for improvement.

Process mapping is a management method for analyzing the current state and designing a future state for the series of events that take a product/service from the beginning to the end of the product/service cycle (Ehrenkranz et al., 2021). This visual tool displays all critical steps in a specific process, which may also include documenting time, volume, materials, data, and information. The purpose of process mapping is to identify and remove/reduce "waste", thereby increasing the efficiency/experience of a given process. This process helps to identify both areas for improvement and the pathway to an ideal future state.

Rules of Session Engagement for the session:

- Focus improvements on systems and processes, not people
- Solution and evidence-based discussions
- Patient-centred first with cultural understanding and competency
- Respect and recognition for what everyone does and contributes
- Non-judgemental and collaborative to accept change and be open to new ideas
- Learn from the experiences of others with effective and respectful communication
- Be realistic (work with the resources we have)

APPENDIX 6.0: KEY FINDINGS AND ACTION ITEMS – DETAILED

Report Theme	Desired Outcome	Key Initiatives
Strategy & Infrastructure	A collective strategy is adopted and implemented to achieve UNAIDS 95-95-95 targets through: e) Effective HIV care continuum & transitions f) Engagement & communication among and across stakeholders g) Commitments to making Saskatoon a 'Fast-tracked City' h) Sufficient & responsive funding	1. Enhance the composition and mandate of the Provincial STBBI Committee to help advance shared goals. 2. Develop and implement a shared HIV strategy/framework across ministries (especially Social Services & Housing and Health, also Justice and Career & Skills) 3. Develop a memorandum of understanding with the Ministry of Social Services to enable and fast-track access to the Saskatchewan Assured Income for Disability (SAID) 4. Develop partnerships for improved health literacy and knowledge translation.
Data measurement and reporting	Accurate and shared data and reporting that effectively demonstrates current state and trends and informs HIV care, allocations and investments.	1. Determine shared prevention and cascade definitions, outcome measures and a data and reporting plan. 2. Conduct an environment scan to identify initiatives/interventions. 3. Monitor and communicate measure across programs.
Care design and delivery	Care continuum is clear, effective, efficient, graduated, accessible and advances improvements in health disparities, HIV prevention, testing (including self-testing), access to rapid treatment, linkage to care and after-treatment program to maintain viral suppression.	1. Create mechanisms and opportunities to continuously share information, interventions and HIV service updates among providers and provider organizations. 2. Develop a graduated/leveled HIV pathway for patients through mapping the HIV continuum of care (both patient and provider prospective) 3. Develop and implement a plan to address health disparities (expanded 24-7 and scattered housing models, increase food security, invest in HIV Housing & Supported Living Coordinator role(s)) 4. Review, define and resource optimal HIV Program team roles. 5. Implement a 'stop-the-line' policy and procedure for racism and stigma in HIV care.
People	Develop and implement an enhanced Peer Support Network.	1. Develop a Peer Network framework (role definitions, resource requirements, support model and training program) that secures funding and enables scale and spread.
Capacity	Develop and implement a communication strategy to effectively inform, engage and mobilize improvement.	1. Communication for key stakeholders: Implement learning tradeshows, data-sharing and multi-agency collaborations, training on trauma-informed and whole-person care. 2. Communication for the public and at-risk populations: Implement a health literacy and public awareness campaign re: sexual health, risk factors, testing, PrEP, ARV injectable use, and "treatment as prevention". 3. Communication for system leaders: Implement a communication plan that build awareness, engages and mobilizes intersectoral leaders at international, provincial, and local levels.

APPENDIX 7.0: CASCADE DEFINITIONS AND DATA SETS USED TO BUILD 90-90-90 CASCADES ACROSS CANADA

TABLE 1: CASCADE DEFINITONS FROM PROGRAMS AND LITERATURE					
Program/ Author	Testing/Diagnosis	Active Patients	Engaged in Care	On ARVs	Virally Suppressed
PHAC (2018) (Extracted from Nicolau et al 2022)	Among those estimated to be PLWH in Canada, the proportion of people who were diagnosed. (Num: #of people living with diagnosed HIV/ Den: # of people living with HIV).	No Measure ReportedéFound	No Measure ReportedéFound	Among those diagnosed with HIV, the number and proportion of people (%) of people with => ART in 2018. Num #of people on ARV/Denom: # of people living with HIV diagnosis (2nd 90).	Among those on ART, the number and proportion (%) of people whose last HIV RNA measurement in 2018 was <200 copies/ml. (Num: # of people with <200 copies/ML on their latest pVL test in 2018/ Den: # of people on ART).
Alexander Wong (Regina)	No Measure ReportedéFound	Appt within 3 months of HIV+ diagnosis.	2 appt made >90 days apart in 12 months.	Rx given for ART in last 12 months.	Last HIV VL ≤ 200 copies/ml in last 12 months.
PLP	No Measure ReportedéFound	1 Appt attended during last 2 years	>1 appt visit within last 12 months	Rx prescribed for ART in last 12 months.	Last HIV VL ≤ 200 copies/ml in last 12 months.
WSCC	No Measure ReportedéFound	1 Appt attended during last 2 years.	>1 appt visit within last 12 months.	Rx prescribed for ART in last 12 months.	Last HIV VL ≤ 200 copies/ml in last 12 months.
WW	No Measure ReportedéFound	1 Appt attended during last 2 years.	>1 appt visit within last 12 months.	Rx prescribed for ART in last 12 months.	Last HIV VL ≤ 200 copies/ml in last 12 months.
SANCTUM	No Measure ReportedéFound	1 appt attended in last 6 months.	>1 appt visit within last 6 months.	Rx Prescribed for ART in last 6 months.	Last HIV VL <40 copies/ml in last 6 months.
Document from Leanne (PH SK)	No Measure ReportedéFound	>1 HIV-related visit within previous 24 months.	>1 HIV visit within 12 months.	Rx Prescribed for ART.	Last HIV VL ≤ 200 copies/ ml.
Lurenco et al 2014 (BC CoC - Heterogenity)	No Measure ReportedéFound	1st instance of HIV service post-diagnosis w/o diagnosis: appt within 30 days of HIV test	HIV appt or test >3 months apart.	>2 drug dispensations ≥ 3 months apart within 12 months.	<200 copies/ml for ≥ 3 months within 12 months.
MacCarthy et al 2015 (extracted and in pink below)					
US CDC	Number of HIV diagnosed cases divided by estimated number of infected cases.	Estimated number of PLWHA with]1 CD4 or VL within a 12-month period divided by estimated # of infected cases.	Estimated number of PLWHA with]2 CD4 or VL 3 months apart with a 12-month period divided by estimated number of infected cases.	Estimated number of PLWHA on ART divided by estimated number of infected cases.	Patients with HIV viral load assessed within 6 weeks of commencing ART (target: 95%).
UK NHS	An HIV-positive diagnosis with a CD4 below 350. Very late is below 200.	Initial meeting with a specialist should be no later than 2 weeks after receiving a positive test result, which should be delivered to the person within 48 hours.	Proportion of people newly diagnosed with HIV who have a CD4 count result in their clinical record within 1 month of their HIV diagnosis (target: 95%).	Proportion of new patients who start therapy when indicated with a CD4 count of B350 cells/mm3 while not already on therapy.	Patients with HIV viral load assessed within 6 weeks of commencing ART (target: 95%).

Brazil MoH	No Measure ReportedéFound	Number of PLWHA who have been linked to health services and have had CD4 and viral load counts or are on ART treatment.	Number of PLWHA that have continued laboratory monitoring or ART therapy throughout the period analyzed.	Number of PLWHA on ART.	Number of PLWHA presenting undetectable viral load (B50 copies/mL).
WHO Global	HIV testing and counselling.	Linkage to care serves as an intermediary step to reach the next stage of enrolment in care.	Retained in care: HIV prevention, HIV care, ART preparation, managing co-infections and comorbidities is the intermediary step between enrolment in care and first line ART.	ART initiation (first, second, third line ART). Late treatment: those initiating ART with CD4 less 5500 cells/mm3 , except under special circumstances.	Viral suppression is achieved when an individual has B1000 RNA copies/mL in low and middle-income countries and B50 RNA copies/mL in high-income countries.
McClarty et al - 2021 (CoC in Manitoba)	Calls this step "Alive and in Care" - Alive and has received a + diagnosis as of end of reporting year.	-Conservative definition: >1 VL test/ CD4 count or physician visit within the first 90 days of diagnosis. -Moderate definition:>1 VL test/ CD4 count or physician visit within the first 180 of diagnosis. -Lenient definition: >1 VL test / CD4 count or physician visit within calendar year.	-Moderate definition: > 2 viral load tests, at least 90 days apart, and/or physician visit in calendar year. -Lenient definition: > 2 viral load tests and/or a physician visit for HIV in calendar year. (NOTE: No conservative definition)	Conservative definition: >3 antiretroviral drug (ARV) dispensations, at least 90 days apart, in 2017. -Moderate definition: >2 ARV dispensations, at least 90 days apart, in 2017. -Lenient definition: >1 ARV dispensation in 2017.	-Conservative definition >2 VL test results <200 copies/mL, one of which is the last VL test in the calendar year. -Moderate definition: > 2 VL test results <200 copies/mL in calendar year. -Lenient definition: Last VL test result in calendar year is <200 copies/mL.
Extracted from Nicolau et al 2022 below in Blue					
Ontario Cascade Definitions	Upper estimate—confirmed HIV-positive test or HIV viral load test, and not lost to follow-up after 4 years Main—confirmed HIV positive test, or HIV viral load test, and not lost to follow-up after 2 years for pVL tests.	Main—≥1 pVL test in two calendar years. Denominator used for calculations is the Diagnosed PLWH (Main) Lower estimate—≥1 pVL test in two calendar years. Denominator used for the calculations is the Diagnosed PLWH (Upper).	Main—Documented on ART or virally suppressed on last pVL test. Use Diagnosed PLWH (Main) as the denominator Upper—Documented on ART, or virally suppressed, on any pVL. Use Diagnosed PLWH (Main) as the denominator Lower—Documented on ART, or virally suppressed, on all pVL tests. Use Diagnosed PLWH (Upper) as the denominator.	Main—pVL <200 copies/mL on last pVL test. Denominator = Diagnosed PLWH (Main) Upper—pVL <200 copies/mL on any pVL test. Denominator = Diagnosed with PLWH (Main) Lower—pVL <200 copies/mL on all pVL tests. Denominator = Diagnosed PLWH (Upper).	No Measure Reported/Found
British Columbia	Instance of one of: i) confirmed HIV positive test, ii) detectable pVL, iii) HIV-related MSP billing or hospitalization, iv) reported AIDS-defining illness, v) ART dispensation.	Among diagnosed cases: • Confirmed HIV test: the first instance of HIV-related service following HIV diagnosis • No confirmed HIV test: the first instance of HIV-related service ≥30d following derived HIV diagnosis date.	Among individuals linked to HIV care—1 of the following: i) HIV-related physician visits ii) diagnostic tests ≥3 months apart iii) at least two ART dispensations ≥3 months apart.	Among those in need of ART—receiving at least two ART dispensations ≥3 months apart, within the calendar year.	Among individuals on ART—having no detectable pVL (pVL <200 copies/mL) over a period ≥3 months in duration within the calendar year.

Northern Alberta	N/A - Has no metric in regional Cascade.	Individuals diagnosed with HIV (defined as positive HIV serology with positive confirmatory test)—referred to and seen by an HIV provider at one of the 3 sites.	N/A - Has no metric in regional Cascade.	Among those in care—patients with database documentation of ART prescription.	Among those in care—patients with less than 200 copies/mL, last test, as of October 31,2020 OR less than 40 copies/mL, last test as of October 31, 2020.
Manitoba (LHIV MB Clinical Cohort)	Alive and diagnosed with HIV.	Cohort participants who had >1 pVL test, >1 CD4 count, and/or >1 physician visit for HIV within the first 180 days of diagnosis.	Cohort participants who had >2 pVL tests and/or >2 physician visits for HIV, at least 90 days apart in calendar year.	Cohort participants who had at least two ART dispensations, at least 90 days apart in calendar year.	Cohort participants whose last viral load test result in calendar year was below 200 HIV RNA copies/mL.
Saskatchewan	confirmed HIV-positive laboratory test.	N/A - Has no metric in Cascade.	N/A - Has no metric in Cascade.	Number of people with at >1 Rx filled for HIV medication.	Number of people with >1 Rx filled for HIV meds with pVL <200copies/mL.
Quebec	N/A - Has no metric in Cascade.	PLWH with at least one HIV care appointment in 2015 (indicator based on van Sighem, 2018)	N/A - Has no metric in Cascade.	Any documented ART use in year, or prior use without the indication of stoppage.	pVLs under 50 copies/mL at the end of 2015. Patients without pVL reported in 2015 were not considered virally suppressed.
NFLD (Clinic Cohort)	N/A - Has no metric in Cascade.	At least one pVL, CD4 or ART prescription in past 12 months.	N/A - Has no metric in Cascade.	At least one ART prescription in 12 months.	Last pVL measurement.
COHORT Studies					
CANOC (2013-2016 cohort)	Must be diagnosed with HIV to be in cohort	Having 1 or more of: 1pVL, 1 CD4 test or 1 ART w/i year	No Measure ReportedéFound	One ART prescription w/i year	Last viral load measurement of the year.
CHIWOS	All participants in the CHIWOS study—1,424 for this analysis.	Among all CHIWOS participants, those who ever accessed HIV medical care at some point after receiving an HIV diagnosis.	Among those who ever accessed HIV medical care, those who received HIV medical care in the past year.	There are three separate ART indicators in this cascade: ART initiation: If ever accessed HIV medical care Current ART: use among participants ever on ART ART adherence: ≥90% of ART in the past month.	Among participants currently taking ART, those who report their most recent viral load was undetectable (<50 copies/mL).
Ontario HIV Treatment Network Cohort Study 2017	N/A - Has no metric in Cascade.	N/A - Has no metric in Cascade.	Those whose who visit with an HIV specialist within a calendar year.	Those who had an ART start date in that year, or on ART and no stop date indicated	Those who were virally suppressed on their last VL.
ENGAGE Cohort Study	Proportion of participants in 3 cities who were previously Dx'd with HIV	N/A - Has no metric in Cascade.	N/A - Has no metric in Cascade.	Proportions currently receiving ART.	Proportions with a pVL below 200 copies/mL.
Canadian Perinatal HIV Surveillance Program (CPHSP)	All women living with HIV who are pregnant and in care are followed.	Proportion of pregnant women living with HIV who know their diagnosis by 2nd trimester.	N/A - Has no metric in Cascade.	Proportion of pregnant women living with HIV on ART before the 3rd trimester.	Proportion of pregnant women who are VS'd (pVL<50 copies/mL) prior to delivery.

EPIC4 (Early Pediatric Initiation Canada Child Cure Cohort)	All children in the EPIC4 cohort are diagnosed with HIV.	All children in the EPIC4 cohort were linked to care at their entry into the cohort through 1 of 8 sites across Canada (Van, Edm, Stoon, Wpg, Ott, TO, Ham, Mtl).	N/A - Has no metric in Cascade.	Data collected at the participating sites regarding ART prescription.	At entry, defined as two pVL tests of.
Nicolau et al. 2022 Recommended HIV Case Cascade standardization Indicators according	Number of people diagnosed with HIV - Rec Def: Total number of people diagnosed with HIV.	N/A - Has no metric in regional Cascade.	N/A - Has no metric in regional Cascade.	Number of people who are currently on ART medication Rec Def: Numerator of people on treatment (≥1 ART)/ Den: number of people diagnosed with HIV.	Number (percentage) of people who had suppressed virus Rec Def: Num: Number of people with <200 c/mL on their latest VL / Den: Number of people diagnosed with HIV.
Cyclical Cascade (proposed model) Ehrenkranz P et al, 2021	Stage 1: HIV+ diagnosis/HIV+ re-diagnosis ➔ Linked/ relinked. Definition: The interval from receiving an HIV–positive diagnosis to enrollment in an HIV treatment program as a new or returning client.	Stage 2: Linked/relinked ➔ Initiated/reinitiated. Definition: Interval from enrollment in an HIV treatment program as a new or returning client to receiving ART.	Labelled as Stage 4: Early retention➔ Long-term retention (beyond first viral load test, often after 6 mon.). Definition: Time from initial VL test (currently guidelines recommend after 6 mon. on ART) to final disengagement from care and/or death.	Puts 'on ARVs' as Stage 3: Initiated/ reinitiated ART➔ Early retention (until first VL test result received or maximum of 6 months after ART start). Definition: Time from first ART dose to initial VL test result, which the 2021 WHO guidelines recommend be reviewed 6 months after initiating ART.	No metric for VL defined in cascade BUT does define <Disengagement> which is defined as: A gap of >30 days without taking ART.

TABLE 2: DATASETS USED TO BUILD PROVINCIAL CASCADES (NICOLAU ET AL. 2022)	
Ontario Cascade Definitions	-HIV Datamart – created by integrating Public Health Ontario Laboratory's diagnostic and viral load databases and linking records at individual level. -Ontario HIV Laboratory Cohort – created using HIV Datamart, represents a cohort of diagnosed people with HIV to monitor engagement in HIV Cascade of Care over time. Individuals living with HIV enter the laboratory cohort if they have a confirmed nominal HIV-positive diagnostic test (1985-2015), or HIV viral load test (1996-2015), excluding non-nominal and anonymous diagnostic tests
BC Cascade Definitions	-HIV Diagnostics - BC CfE -HIV testing - BC Centre for Disease Control (BC CDC) -Antiretroviral treatment (ART) dispensations - BC CfE -Non-ART medications – BC PharmaNet -Viral Loads – St Paul's Hospital viral lab – BC CfE -Physician Billing - Medical Services Plan, BC MOH -Hospitalizations -Discharge Abstract Database, BC MOH -Deaths - Vital Statistics Database, BC MOH
Northern Alberta	-Diagnosis – Communicable Disease Reporting System (CDRS) -ART Dispensations – Pharmaceutical Information Network -Viral Loads – Provincial Laboratory for Public -Health (Provlab), Calgary Lab Services (CLS) -Deaths and out-migration – Alberta Health Care Insurance Plan (AHCIP) population registry files -Deaths– Vital Statistics Database, CDRS
Manitoba (LHIV MB Clinical Cohort) (Nicolau)	-Estimated deaths – Statistics Canada -Number in care – Manitoba HIV Program -Number on drugs – Drug Program Information Network Database -Viral loads - CPL
Saskatchewan (Nicolau, 2022)	-HIV Diagnosis - Ministry Notifiable Disease Data -Number on medications - Ministry outpatient prescription drug data (included First Nations and non-First Nations) -Test records and Viral loads – Saskatchewan Disease Control Laboratory Data
Quebec	The Surveillance Plan proposes to access: -Québec HIV Surveillance program – INSPQ -Fee-for-Service Medical Services - Régie de l'assurance maladie du Québec (RAMQ) -Pharmaceutical services – RAMQ -Insured Person Registration File – RAMQ -Eligibility file for Drug Insurance – RAMQ -Eligibility file for Health Insurance – RAMQ -HIV lab tests confirmations – LSPQ -Viral loads – LSPQ -Deaths - Vital statistics Database, MSSS
New Brunswick	Information requested to ID Physicians: -The number of HIV patients they were following -Of those how many on ART -Of those treated, how many had suppressed viral load
Northwest Territory	-Prevalent cases - NWT Information Services/Health Insurance Registry (HMIS) -Confirmed prevalent cases - NWT Integrated Public Health Information System (iPHIS) -Identification of health care providers - HIV/AIDS case reports -Confirmed cases, deaths, ART, and viral load - Interviews with healthcare providers -Viral load - Stanton Territorial Hospital Lab and Alberta Provincial Lab data -Deaths - NWT Vital Statistics

TABLE 3: HOW 90-90-90 MEASURES ARE BUILT			
	1st 90	**2nd 90**	**3rd 90**
PHAC, Working Group definitions	Persons diagnosed with HIV to end 2014 and alive	Persons with ≥ antiretroviral treatment in 2014	Persons with latest viral load (VL) <200 in 2014
British Columbia	Defined as persons with one of the following: (i) confirmed HIV-positive test; (ii) detectable plasma viral load (iii) HIV-related medical services plan billing or hospitalization; (iv) reported AIDSdefining illness; (iv) antiretroviral treatment dispensation	At least two ART dispensed ≥3 months apart in 2014	No detectable VL for ≥3 months in 2014
Alberta	Defined as total HIV reported cases at the end of 2014, minus estimated deaths and out-of-province migration	At least one ART prescription in 2014, excluding persons presumed to be on PEP or PrEP	VL <200 copies/mL on last test in 2014
Ontario	Main estimate : Confirmed HIV-positive diagnostic test (nominal), or HIV VL test, and not administratively lost to follow-up* after 2 years Upper estimate: Confirmed HIV-positive diagnostic test (nominal or non-nominal); or HIV VL; and not administratively lost to follow-up after 3 years	Main: Documented* on treatment on last VL test, or treatment status not documented and suppressed on last VL test Upper: Documented* on treatment on any VL, or treatment status not documented and suppressed on any VL Lower: Documented* on treatment on all VL tests, and/or treatment status not documented and suppressed on all VL tests * ART status is documented on VL test requisition forms by submitting provider, and is missing for 17-20% of forms.	Main: VL <200 copies/mL on last VL test, and (known on treatment, or treatment status not documented) on last VL test. Upper : VL <200 copies/mL on any VL test, and (known on treatment, or treatment status not documented) on any VL test. Lower: VL <200 copies/mL on all VL tests, and (known on treatment, or treatment status not documented) on all VL tests.
Quebec	Modeling based on HIV surveillance data including key populations	Number of patients receiving ART	Number of people with VL undetectable (< 20 copies/ml) or suppressed (< 200 copies/mL)
Manitoba	total HIV cases reported by MB to end 2014 minus deaths	At least one ART prescription in 2014	VL <200 copies/mL on last test in 2014
Saskatchewan	SK estimate of persons diagnosed with HIV who had a VL test in 2014, plus HIV-positive persons who had SK Disease Control Laboratory test records for other services since 2014	Number of people with at least one prescription dispensed for HIV medications in 2014, adjusted for PEP and PrEP.	Number of people with a viral load <200 copies/ML in 2014
New Brunswick	Infectious disease clinicians provided number of people seen for HIV care in 2014	Persons with at least one ART prescription in 2014	Viral load <200 copies/mL on last test in 2014
Northwest Territory	Infectious disease clinicians provided number of people seen for HIV care in 2014	Persons with least one ART prescription in 2014	Viral load <200 copies/mL on last test in 2014


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