

Research Policies

Ontario HIV Treatment Network

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Introduction

The OHTN Cohort Study (OCS) is a multi-site, longitudinal study of people living with HIV in Ontario. Its **vision** is to develop and sustain a unique prospective cohort, governed by people living with HIV and used to support collaborative, rigorous research in population health, clinical, psychosocial and behavioural sciences and health services research. The **goals** of the OCS are:

To maintain a rich and comprehensive dataset by:

- ensuring that participants reflect the population of persons with HIV who are in care in Ontario;
- supporting the ongoing collection of health data to ensure capacity to examine new and emerging health issues; and
- establishing and supporting linkages with other data sources including multi-cohort collaborations.

To promote collaboration and synergy in developing and addressing research questions by:

- ensuring rigorous and relevant scientific explorations that may lead to influencing new or changes in health policy, care and treatment for people living with HIV;
- encouraging multi-disciplinary, multi-stakeholder and community collaborations;
- providing support for scientific and community partnerships; and
- inviting external community, academic and clinical researchers and students to participate in OCS research.

To share knowledge gained through OCS research by:

- promoting scientific findings to influence health care practice and policy;
- using OHTN knowledge and communication tools and networks to disseminate findings; and
- ensuring that findings are accessible and available to all stakeholders, including public and health policy makers, people living with HIV, and health care providers.

The research policies set out in this document ("Policies") have been developed to ensure that the OCS will achieve its vision and goals while adhering to its guiding **principles:** community ownership and governance; informed and voluntary consent; privacy and confidentiality; greater involvement of people living with or affected by HIV (GIPA); accountability; and sustainability.

Guidelines for Community Involvement in OCS Research

Researchers using the OCS Data are expected to understand the HIV epidemic and its impact upon people in Ontario and to have carefully considered the community in the development, design, conduct and dissemination of research. All Research Projects therefore require some degree of community involvement.

The definition of "community" used in the OCS Scientific Protocol includes people living with and affected by HIV, community-based organizations and groups that provide services for people living with HIV and those at risk of HIV transmission, and community-based organizations and groups that advocate on behalf of people living with HIV and those at risk.

It is expected that OCS researchers will establish links with the community in ways that are appropriate to the Research Project being undertaken. Researchers need to demonstrate that they have obtained meaningful community input, beginning with the conception and development of the proposal and continuing through the course of the project and the dissemination/impact of its results. Researchers should also strive to ensure that the outcomes of their projects meet the OHTN's commitment to optimize the quality of life of PHAs.

Who, specifically, will constitute the "community" for the purposes of preparing a Research Project Proposal will vary according to the scope and focus of the project. Researchers should consider the people, organizations and groups who may be implicated in or affected by the proposed research.

Ensuring community involvement is an essential component of the OCS research process. Failure to comply with this requirement may result in a Research Project Proposal being rejected.

How can OCS researchers achieve community engagement?

Examples of the different ways in which researchers can ensure community involvement in their Research Projects include, but are not restricted to:

- Including community members in Research Project Teams
- Including community members in discussions regarding the development of Research Project Proposals. Informal discussions of this kind demonstrate positive intentions on the part of researchers.
- Establishing community advisory groups to help guide Research Projects as they progress. Community consultation for Research Projects for which an advisory group may not be appropriate can be undertaken through venues such as community health forums sponsored by AIDS service organizations, the Ontario AIDS Network, etc.
- Disseminating research results to community stakeholders. Examples include making an informal presentation to a relevant community organization and/or writing a plain-language article (i.e., for a local newsletter/paper, website or other online resource) on either the topic being investigated or the results of the Research Project. Presentations and articles can include requests for responses from interested persons, to provide feedback or learn more about the Research Project).
- Mentoring students and research assistants in making links between their research (i.e., in the conduct of Research Projects) and the community

1 Description and Purpose of the OHTN Cohort Study

1.1 The OCS is a prospective, longitudinal, observational database. Patients are enrolled in the OCS on a voluntary basis, following review and signature of the consent form approved by the Research Ethics Board ("REB") of the University of Toronto and of other participating institutions.

1.2 The purpose of the OCS, as established by the OCS Scientific Protocol, approved by the REB of the University of Toronto and other participating institutions, is to collect information on the clinical and health profiles of people living with HIV in Ontario in order to provide a robust information resource for clinical, socio-behavioural, population health, health services and genotype testing research in HIV. A copy of the OCS Scientific Protocol is attached as Appendix B.

1.3 The OHTN will only collect, use and disclose de-identified information pertaining to OCS Participants ("OCS Data") for the purpose of scholarly research that contributes to an improved understanding of HIV contributes to improved treatment for people living with HIV, and/or helps people living with HIV get better access to care.

2 Governance of the OCS

2.1 OHTN Board of Directors

2.1.1 Governance of the OCS is vested in the OHTN's Board of Directors ("OHTN Board"). A majority of the members of the OHTN Board are from the community.

2.1.2 The OHTN, under the direction of its Executive Director, is responsible for providing the necessary staff to effectively maintain the OCS including the collection, use and disclosure of OCS Data in accordance with the requirements of the OCS Scientific Protocol and these Policies.

2.2 Principal Investigator and Co-Principal Investigator

2.2.1 The Principal Investigator of the OCS has primary responsibility for the intellectual direction of research and research-related activity undertaken using the OCS Data and assumes administrative responsibility for maintaining the OCS in accordance with the requirements of the OCS Protocol and these Policies. The Principal Investigator is also understood to be responsible for the overall leadership of the OCS Study Team.

2.3 OHTN Cohort Study Team

2.3.1 The OHTN Cohort Study Team consists of OCS site investigators and scientists.

The OHTN Cohort Study Team consists of Drs. Lawrence Mbuagbaw (Principal Investigator), Ann Burchell (Co-Principal Investigator), Anita Benoit (Co-Investigator), Sergio Rueda (Chair of Scientific Steering Committee); Gordon Arbess, Unity Health; Corinna Quan, Windsor Regional Hospital; Curtis Cooper, Ottawa General Hospital; Maheen Saeed, Byward Family Health Team; Mona Loutfy and David Knox, Maple Leaf Medical Clinic; Adrienne K. Chan, Sunnybrook Health Sciences Centre; Alice Zhabokritsky, University Health Network; Huma Saeed, St. Joseph's Health Care; Tammy Bourque, Sudbury Regional Hospital; Marek Smieja, Hamilton Health Sciences Centre; Wangari Tharao, Women's Health in Women's Hands Community Health Centre; Holly Gauvin, Elevate NWO; Jorge Martinez-Cajas, Kingston Hotel Dieu Hospital; and Jeffrey Craig, Lakeridge Positive Care Clinic.

2.4 OCS Scientific Steering Committee

2.4.1 The OCS Scientific Steering Committee advises the OCS Governance Committee on scientific matters related to the OCS.

2.4.2 The composition, mandate, reporting relationships, quorum and other meeting requirements of the OCS Scientific Steering Committee are set out in the Terms of Reference attached as Appendix C-1.

2.5 OCS Governance Committee

2.5.1 The OCS Governance Committee oversees and advises the OHTN Board on matters related to the OCS. A majority of the members of the OCS Governance Committee are people living with HIV.

2.5.2 The OCS Governance Committee's composition, mandate, reporting relationships, quorum and other meetings requirements are set out in the Terms of Reference attached as Appendix C-2.

2.6 OCS Indigenous Governance Circle

2.6.1 The OCS Indigenous Governance Circle advises the OCS Governance Committee on scientific matters related to the OCS pertaining to Indigenous Peoples.

2.6.2 The OCS Indigenous Governance Circle's composition, mandate, reporting relationships, quorum and other meetings requirements are set out in the Terms of Reference attached as Appendix C-3.

3 OCS Data Collection and Participant Management

3.1 OCS Sites are responsible for collecting personal health information data for the purposes of participant management only. This data is never disclosed to the OHTN or to other OCS sites.

3.2 Participant data is always encrypted in transit, and transient data is never cached/stored locally. The data is stored encrypted in a database in a cloud-based server, and can only be unencrypted at the site using an OCS provided laptop with a site-unique security certificate.

3.3 Access to OCS data at the site is only available to OCS data collectors, who are assigned login information unique to each data collector.

3.4 PHI is used to create pseudo-identifiers using a one-way mathematical algorithm which cannot be decrypted. These identifiers are used to detect duplicate enrolment across sites and to link to external databases (such as IC/ES) using the black box (OCS Scientific Protocol). Pseudo-identifiers are not shared with OCS sites.

3.5 Participants who withdraw from the study will be given the option to do a partial or complete withdrawal. A partial withdrawal will allow future data releases to include the data already collected, a full withdrawal will allow a participant to remove all of their data from any future data release.

3.6 The OHTN collects only de-identified health and other information ("data") into the OCS.

3.7 Data pertaining to OCS Participants is collected into the OCS from three main sources:

3.7.1 from health records maintained for the OCS Participants by their HIV primary care physicians or specialists (e.g., the physicians' office or clinic charts);

3.7.2 from OCS Participants directly (e.g., in periodic interviews and/or questionnaires); and

3.7.3 from institutions holding collections of health information such as the Public Health Laboratory of Public Health Ontario,[1]

3.8 When data is collected from an OCS Participant's health records as maintained in health records by his or her physician or clinic or directly through interviews and/or questionnaires (sections 3.2.1 and 3.2.2 above), the OCS Participant's name and other information that could be used to identify the participant are removed and replaced with a pseudo-identifier before any information leaves the office of the physician or clinic.

[1] Also known as the Ontario Agency for Health Protection and Promotion or "OAHPP".

3.9 The OHTN may collect data relating to OCS Participants from external sources of health information into the OCS to be linked to existing OCS Data (section 3.2.3 above) if the following requirements are met:

3.9.1 OHTN Staff prepare a proposal, which must include:

- a description of the nature and extent of the data proposed to be collected and an explanation of why it is necessary;
- a description of the proposed method to achieve the data linkage, which must ensure that only de-identified data pertaining to OCS Participants is collected into the OCS; should disclosure of the pseudo-identifiers pertaining to OHTN Participants to persons other than OHTN Staff authorized in accordance with Part 5 below be required as part of this process, this must be clearly stated and explained in the proposal and the linkage will require REB approval from the University of Toronto and, if and as required, other participating institution(s);[2]
- a review of the external data source's policies regarding the collection, use, disclosure, privacy, confidentiality, security, retention and destruction of data as relevant to the proposed linkage to the OCS (including copies of the policies), and assessment of the adequacy of the policies to ensure the de-identification of all data pertaining to OCS Participants;
- a draft data sharing agreement between the OHTN and the external source to address the collection, use, disclosure, privacy, confidentiality, security, return and destruction of the data; [3] and
- a recommendation as to whether the proposal should be reviewed and approved by the REB of the University of Toronto and/or other participating institution(s) because the aims or methodology for the proposed linkage exceed what is authorized by the OCS Scientific Protocol or for any other reason;

3.9.2 the OCS Governance Committee reviews the proposal and recommends its approval to the OHTN Board;

3.9.3 the OHTN Board reviews and approves the proposal; and

3.9.4 the proposal has been reviewed and approved by the REB of the University of Toronto and other participating institution(s), if and as required.

3.10 Before proceeding with any linkage authorized pursuant to section 3.4 above,

3.10.1 the terms and conditions pursuant to which the OHTN will obtain access to the de-identified data about OCS Participants are set out in the written data sharing agreement approved in accordance with section 3.4 above, and that agreement is signed by all parties before the data are collected into the OCS; and

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2 The OHTN's usual method for collecting de-identified data from external sources of health information into the OCS is described in the OCS Scientific Protocol and does not require disclosure of the pseudo-identifiers pertaining to OCS participants to any person other than OHTN Staff authorized in accordance with Part 5 below.

3 All parties to such an agreement with the OHTN must be individuals or entities with the power and authority to enter into legally binding contracts.

3.10.2 OHTN Staff will take reasonable steps to review the data to be imported into the OCS to ensure that no identifying information pertaining to one or more OCS Participants has been included inadvertently; if a problem is identified, the OHTN will not proceed with the linkage and will return all copies of the data to the external source or will defer linkage until the matter is resolved.

3.11 All data imported into the OCS are subject to these Policies.

4 OCS Data Security, Retention and Destruction

4.1 The OHTN collects only de-identified health information and other data into the OCS.

4.2 OCS data contains only de-identified data pertaining to OCS Participants.

4.3 OCS data is securely housed at the OHTN and encrypted on secure cloud based servers.

4.4 Access to OCS Data (including data being collected into the OCS) is restricted to:

- OHTN Staff authorized to collect, use and/or disclose OCS Data in accordance with Parts 5, 6, 7 and 8 below; and
- Researchers (including OHTN Staff Scientists and other OHTN Staff) authorized to collect, use and/or disclose OCS Data in accordance with Part 6 below.

4.5 The OHTN will establish and maintain *OCS Minimum Data Security Requirements for Researchers* (Appendix J) to provide for the security of OCS Data disclosed to researchers in accordance with these Policies.

4.6 The OHTN will never disclose the pseudo-identifiers pertaining to OHTN Participants to any person other than OHTN Staff authorized in accordance with Part 5 below, subject only to sections 3.4.1 above and 6.12.2 below.

4.7 In the event of any known or suspected breach of the privacy, confidentiality or security of OCS Data the OHTN Staff and/or Research Team Members who discover the breach must, in accordance with applicable OHTN Policies:

4.7.1 notify the Principal Investigator and/or Co-Principal Investigator as soon as possible following discovery of the breach (preferably within 48 hours), or ensure that the Principal Investigator and/or Co-Principal Investigator have been notified by some other responsible person(s); and

4.7.2 provide the Principal Investigator and/or Co-Principal Investigator with a signed report (i.e., a copy of the completed OCS Breach Report Form, see Appendix L) documenting the relevant circumstances, all remedial steps taken and all further remedial steps recommended no later than one week following discovery of the breach, or ensure that this has been provided by some other responsible person(s).

4.7.3 notify the OHTN in the event that there are changes to the Project Team and provide the OHTN with the names and role of any new members within thirty (30) days of such changes being made in the OCS Breach Report Form attached as Appendix L;

(i) ensure that all members of the Project Team understand and agree to comply with these provisions;

4.8 The OHTN will retain OCS Data until no longer required to achieve the purpose of the OCS.

4.9 OCS Data no longer required for the purpose of the OCS will be destroyed.

4.10 If the OHTN will cease to exist as an organization, the OHTN Board will make best efforts to transfer custodianship of the OCS to another organization provided the following requirements are met:

4.10.1 the organization to which custodianship of the OCS will be transferred enters into a written agreement with the OHTN and other party or parties as appropriate to ensure the commitments made will be legally enforceable, which must include the following:

- a commitment to adhere to the OCS purpose as established by the OCS Scientific Protocol, the OHTN mission and principles, and the OCS vision, goals and principles; and

- provisions to govern the collection, use, disclosure, privacy, confidentiality, security, retention and destruction of the OCS Data consistent with the OCS Scientific Protocol, the OHTN's mission and principles, the OCS vision, goals and principles, and these Policies; and

4.10.2 the proposed transfer, including the draft agreement required above, has been reviewed and approved by the REB of the University of Toronto and, if required, other participating institution(s).

4.11 If the OHTN will cease to exist as an organization but the OHTN Board cannot identify an appropriate custodian for the OCS Data or the proposed custodian fails to meet the requirements set out in section 4.9 above, the OHTN Board will, in accordance with any recommendations from the REB of the University of Toronto and/or other participating institution(s), make best efforts to either:

- preserve the OCS Data; or

- ensure the secure and permanent destruction of the OCS Data.

5 Collection, Use and Disclosure of OCS Data for Administrative Purposes

5.1 OHTN Staff may be authorized, on a "need-to-know" basis, to collect, use and/or disclose OCS Data for administrative purposes, i.e., to fulfill responsibilities to the OHTN related to the manipulation, transformation, cleaning and quality control of the OCS Data, and other such functions.

5.2 No OHTN Staff shall collect, use or disclose OCS Data for any purpose without the express written authorization of the OHTN, in his or her contract of employment or for services or otherwise by the OCS Principal Investigator and/or Co-Principal Investigator. This written authorization must:

- specify which OCS Data the OHTN Staff have been authorized to collect, use and/or disclose and for what purpose;
- specify whether the OCS Data will be provided or otherwise accessible in Standard Release or Conditional Release format; and
- be maintained by the OHTN, preferably with a copy in the personnel or contract file of the OHTN Staff so authorized.

5.3 OHTN Staff may collect, use and/or disclose OCS Data, at an aggregate-level only, to provide an OCS Data Scan to a person(s) external to the OHTN if the following requirements are met:

- OHTN Staff prepare a proposal to prepare and provide an OCS Data Scan to a person(s) external to the OHTN upon receipt of a completed and signed OCS Data Scan Request form (Appendix G), which explains the nature and extent of the data requested and the purpose for which the data have been requested;
- the proposal is reviewed and approved by the Principal Investigator and/or Co-Principal Investigator; and
- if approved:
    - the OCS Data Scan will be provided by OHTN Staff to the person(s) who requested it, in accordance with the terms and conditions approved, and
    - the proposal and outcome of the approved request (including a copy of the OCS Data Scan as provided to the requester) are reported to the OCS Governance Committee at its next meeting to follow the approval.

5.4 OHTN Staff authorized to collect, use and/or disclose the OCS Data for any purpose must receive training from the OHTN to ensure the privacy, confidentiality, security and appropriate uses of the OCS Data including, but not limited to, understanding the requirements established by these Policies and other applicable OHTN policies, procedures and practices.

5.5 OHTN Staff authorized to collect, use and/or disclose OCS Data must sign a confidentiality agreement (which may be included in their contract of employment or for services) that includes, but may not be limited to, the following commitments:

- to comply with all requirements of these Policies and all other applicable OHTN policies, procedures and practices, as these may exist from time to time;
- to comply with all other terms and conditions the OHTN may impose relating to the collection, use, disclosure, privacy, confidentiality, security, retention and destruction, of OCS Data;
- not to publish or otherwise disclose OCS Data to any person not authorized to receive it in accordance with these Policies in a form that could reasonably enable another person to ascertain the identity of one or more individuals to whom the data relates;
- not to contact, or attempt to make contact with, any individual to whom the OCS Data relates, directly or indirectly, although the OHTN may engage in activities for the purpose of effecting knowledge translation and exchange that are designed and undertaken in a manner that prevents the direct or indirect identification of OCS Participants;
- to collect, use and/or disclose OCS Data solely for the purposes set out in his or her written authorization to collect, use and/or disclose OCS Data (in accordance with this Part 5) or in accordance with Parts 6 to 8 below; and
- to notify the Principal Investigator and/or Co-Principal Investigator in writing, in accordance with applicable OHTN Policies, should he or she become aware of any known or suspected breach of the privacy, confidentiality or security of the OCS Data agreement.

5.6 OHTN Staff must collect, use and/or disclose OCS Data on OHTN premises unless:

5.6.1 engaged in the collection of data into OCS and/or related activities which are reasonably required to be performed off-site; or

5.6.2 authorized to collect, use and/or disclose OCS Data off-site in accordance with section 5.7 below.

5.7 OHTN Staff and contractors may use OCS Data off-site (i.e., of the OHTN's premises) for purposes other than section 5.6.1 above if the following requirements are met:

- the OHTN Staff prepares a Request for Off-Site Data Use form (Appendix D), which specifies the data for which approval for off-site use is sought and the proposed format for release of the OCS Data to be used off-site;
- the completed Request for Off-Site Data Use form (Appendix D is reviewed and approved by the OCS Principal Investigator and/or Co-Principal Investigator and the OHTN Privacy Officer; and
- the OCS Data approved for off-site use are prepared and released in accordance with Part 7 below and are used by the OHTN Staff in accordance with the terms and conditions of any approval granted.

5.8 All approved Requests for Off-Site Data Use must be reported to the OCS Governance Committee at its next meeting to follow approval of the request.

5.9 OHTN Staff authorized to collect, use and/or disclose OCS Data in accordance with this Policy shall not do so for the purpose of research unless authorized in accordance with Part 6 below.

5.10 The OHTN will not sell OCS Data for any purpose.

5.11 The OHTN may charge a fee for research, analysis and other services performed by OHTN Staff on a cost-recovery basis at the discretion of the OHTN Board.

6 Collection, Use and Disclosure of OCS Data for Research

6.1 The OHTN may authorize the collection, use and disclosure of OCS Data for the purpose of scholarly research by the principal investigator of a Research Project ("Research Project PI") or by a member of the research team for the project ("Research Project Team") if:

- the proposal for the research project ("Research Project Proposal") has been reviewed and approved in accordance with this Part;
- the Research Project PI and all other members of the Research Project Team have signed a researcher's agreement with the OHTN which shall include, among other requirements, the obligation to adhere to:
  - the OCS Scientific Protocol, these Policies, and all other applicable OHTN policies, procedures and practices as these may exist from time to time; and
  - the OCS Minimum Data Security Requirements (Appendix J).

6.2 OCS Data authorized for collection, use and/or disclosure for research in accordance with this Part will be prepared and released in accordance with Part 7 below.

6.3 Research Project Team Composition

6.3.1 A Research Project Team must include, at minimum, a Research Project PI and one member of the OHTN Cohort Study Team (section 2.3 above).

6.3.2 Research Project Teams are strongly encouraged to invite the participation of the OCS site investigator (or his or her designate) from each of the sites contributing OCS Data to be used for the proposed study. A current list of OCS site investigators is available on the OCS website (www.ohtncohortstudy.ca).

6.3.3 Research Project Teams are also encouraged to involve people living with HIV and other community members at all stages of the research process. The Introduction provides suggestions as to how OCS researchers can achieve community involvement.

6.4 OCS Concept Sheet

6.4.1 Before submitting a Research Project Proposal, a researcher(s) seeking access to the OCS Data must submit an OCS Concept Sheet (Appendix F) to the OCS Research Coordinator for review and approval. This requirement does not apply to OHTN Staff Scientists, who are governed by section 6.6 below, but does apply to other OHTN Staff.

6.4.2 The OCS Concept Sheet will be reviewed by the Principal Investigator, Co-Principal Investigator and Chair of the OCS Scientific Steering Committee. This informal review serves to: minimize duplication of effort where previous or current research teams are engaged in similar projects; alert OHTN Staff to pending projects; and provide an opportunity to identify synergies between Research Projects and Research Project Teams.

6.4.3 Presentation of the OCS Concept Sheet may be requested by a member of the Research Project Team and/or recommended by one or more of the Principal Investigator, OCS Co-Principal Investigator or Chair of the OCS Scientific Steering Committee.

6.4.4 The OCS Concept Sheet will be reviewed by the Principal Investigator, Co-Principal Investigator and Chair of the OCS Scientific Steering Committee and will be:

- approved as proposed;
- approved with recommended or necessary revision(s); or
- not approved, with a brief explanation of the reasons for that decision.

6.5 OCS Data Scan Request

6.5.1 Following review and approval of an OCS Concept Sheet, a researcher(s) may submit an OCS Data Scan Request form (Appendix G) to the OCS Research Coordinator to obtain disclosure of aggregate-level OCS Data relevant to an approved OCS Concept Sheet for the purpose of preliminary data analysis.

6.5.2 The OCS Data Scan Request will be reviewed by the Principal Investigator and Co-Principal Investigator and will be:

- approved as proposed;
- approved with recommended or necessary revision(s); or
- not approved, with a brief explanation of the reasons for that decision.

6.6 Preliminary Analysis by OHTN Staff Scientists

6.6.1 OHTN Staff Scientists may collect, use and/or disclose OCS Data in Standard Release or Conditional Release format for the purpose of preliminary data analysis leading to a potential Research Project Proposal.

6.6.2 Before undertaking any activity permitted by section 6.6.1 above, OHTN Staff Scientists must submit an OCS Concept Sheet to the Principal Investigator and/or Co-Principal Investigator for review and approval.

6.6.3 The OCS Concept Sheet will be reviewed by the Principal Investigator and Co-Principal Investigator and will be:

- approved as proposed;
- approved with recommended or necessary revision(s); or
- not approved, with a brief explanation of the reasons for that decision.

6.7 Research Project Proposal Requirements

6.7.1 All researchers seeking access to the OCS data must submit a written Research Project Proposal to the OCS Research Coordinator for review and approval in accordance with this Part.

6.7.2 All Research Project Proposals must contain the information set out in the OCS Research Project Proposal Form (Appendix H) including, in particular, whether OCS Data are sought in Standard Release or Conditional Release format.

6.7.3 A Research Project Proposal may take the form of a proposal prepared as part of an application for external funding as long as the information required by the OCS Research Project Proposal Form (Appendix H) is included.

6.7.4 The Research Project Proposal must:

- be eligible for implicit approval by the REB of the University of Toronto; or
- have obtained REB review and approval from the University of Toronto; or
- have obtained REB review and approval from one or more other participating institution(s), if and as required.

6.8 Scientific Review of Research Project Proposals by OCS Scientific Steering Committee

6.8.1 The purpose of scientific review by the OCS Scientific Steering Committee is to ensure that the research objectives and analytical plan of each proposal are scientifically feasible and methodologically sound. The OCS Scientific Steering Committee will also assess the necessity of each data element requested in the Research Project proposal to assess whether the proposal presents a risk of residual disclosure and, if so, to recommend how any such risk may be addressed.

6.8.2 A Research Project Proposal that has been developed as part of an application for external funding and that has undergone successful scientific review as part of that application process may be exempted from OHTN scientific review by the Principal Investigator and/or Co-Principal Investigator.

6.8.3 The scientific review of a Research Project Proposal by the OCS Scientific Steering Committee will proceed as follows:

- the proposal will be reviewed by two researchers, preferably with experience in the relevant area of study;
- these scientific reviewers will remain anonymous to the Research Project Team; and
- the proposal and all related scientific reviews will be reviewed by the OCS Scientific Steering Committee.

6.8.4 The OCS Scientific Steering Committee may:

- Recommend the Research Project Proposal for approval as proposed. If so, it will proceed for review by the OCS Governance Committee.

- Recommend the Research Project Proposal for approval with comments and/or minor revision(s). If so:

    - the Research Project Team must revise the proposal as recommended or otherwise respond to the recommendations for revision; and

    - the Proposal will proceed for review by the OCS Governance Committee.

- Recommend the Research Project Proposal for approval with major revision(s). If so:

    - the Research Project Team must revise the proposal as recommended or otherwise respond to the recommendations for revision and re-submit the proposal to the Chair of the OCS Scientific Steering Committee (or his or her designate) for further scientific review; and

    - the proposal will proceed for review by the OCS Governance Committee if and as approved by the OCS Scientific Steering Committee.

- Refuse to recommend the Research Project Proposal for approval, with a brief explanation of the reasons for that decision.

6.9 Community Review by OCS Governance Committee

6.9.1 The purpose of community review by the OCS Governance Committee is to review each Research Project Proposal following successful scientific review:

- For ethical considerations: To determine:

    - whether the proposal falls within the scope (i.e., principal aims) of the OCS Scientific Protocol and therefore qualifies for implicit REB approval by the University of Toronto or, alternatively, must be reviewed and approved by the University of Toronto's REB and/or other participating institution(s); and

    - whether the proposal presents any other ethical consideration that warrants review and approval by the University of Toronto's REB and/or other participating institution(s); such ethical considerations may include inconsistency with the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (December 2010, or as amended) and/or with OHTN and OCS values and principles as set out below; and

- For consistency with the OHTN and OCS values and principles: To ensure that the Research Project Proposal is consistent with the values and principles of the OHTN and OCS including whether:
    - it is consistent with the OCS Purpose as established by the OCS Scientific Protocol;
    - it is consistent with the OHTN mission and OHTN principles;
    - it is consistent with the OCS vision, goals and principles;
    - its anticipated benefit(s) outweigh any reasonably foreseeable harm(s);
    - the data elements requested are required to address the proposed research question(s);
    - it presents any risk of residual disclosure and, if so, whether all appropriate steps will be taken to minimize that risk; and
    - the Research Project Team has proposed an appropriate plan for knowledge translation and exchange with the community.[4]

6.9.2 The community review of a Research Project Proposal by the OCS Governance Committee will proceed as follows:

- the proposal will be reviewed by OHTN Staff to assess the risk of residual disclosure to OCS Participants, if any, and will provide this assessment and all related recommendations to the OCS Governance Committee;
- the proposal will be reviewed by two OCS Governance Committee members and/or external reviewers, preferably with experience in the relevant area and/or community of study; these community reviewers will remain anonymous to the Research Project Team; and
- the proposal, all community reviews and the OHTN Staff assessment of the risk of residual disclosure to OCS Participants will be reviewed and considered by the OCS Governance Committee.

6.9.3 The OCS Governance Committee may, in accordance with section 6.11 below:

- Approve the Research Project Proposal, or recommend the Research Project Proposal for approval by the Board, as proposed,
- Approve the Research Project Proposal, or recommend the Research Project Proposal for approval by the Board, with comments and/or minor revision(s). If so:
    - the Research Project Team must revise the proposal as recommended or otherwise respond to the recommendations for revision;

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4 *OHTN Strategic Plan to 2015*, p.20

- unless otherwise specified by the OCS Governance Committee, the Research Project Team's response and/or revised proposal will be reviewed by the Principal Investigator or Co-Principal Investigator and the OCS Governance Committee Chair (or his or her designate); and

- the proposal will be approved by the OCS Governance Committee, or proceed for review and approval by the OHTN Board, only after the Research Study Team has fully addressed the Governance Committee's concerns.

- Recommend the Research Project Proposal for approval with major revision(s). If so:

  - the Research Project Team must revise the proposal as recommended or otherwise respond to the recommendations for revision and re-submit the proposal for further review by the OCS Governance Committee; and

  - the proposal will be approved by the OCS Governance Committee, or proceed for review and approval by the OHTN Board, only after the Research Study Team has fully addressed the Governance Committee's concerns including all required revision(s) to the proposal.

- Refuse to approve the Research Project Proposal, or to recommend the Research Project Proposal for approval by the Board, with a brief explanation of the reasons for that decision.

6.10 Community review by OCS Indigenous Governance Circle

6.11 The purpose of community review by the Indigenous Governance Circle is to review and approve, or otherwise dispose of, requests for access to and interpretation of the OCS Data pertaining to Indigenous people in accordance with OCS policies. This includes the review of all study findings with results relevant to Indigenous people.

6.12 The community review of a Research Project Proposal or data product by the OCS Indigenous Governance Circle will proceed as follows:

- All research proposals will be reviewed by the Governance Committee as described in section 6.9.2

- Any research proposals or study findings pertaining to Indigenous people will undergo additional review by the Indigenous Governance Circle

- The chairs and/or Principal Investigator/OCS Director may, at their discretion, invite external reviewers and/or others to participate in the committee's activities to ensure rigorous and fair review of individual research proposals or consideration of other OCS-related matters

- The Indigenous Governance Circle will review the proposal or study findings and all decisions will be will be made by consensus

- In the case that consensus cannot be met, the Circle may determine an alternate voting procedure on an ad hoc basis

6.13 The OCS Indigenous Governance Circle may, in accordance with section 6.11 below

Approve the Research Project Proposal, or recommend the Research Project Proposal for approval by the Board, as proposed,

Approve the Research Project Proposal, or recommend the Research Project Proposal for approval by the Board, with comments and/or minor revision(s). If so:

- the Research Project Team must revise the proposal as recommended or otherwise respond to the recommendations for revision;
- unless otherwise specified by the OCS Indigenous Governance Circle, the Research Project Team's response and/or revised proposal will be reviewed by the Principal Investigator or Co-Principal Investigator and the OCS Governance Circle Chair (or his or her designate); and
- the proposal will be approved by the OCS Indigenous Governance Circle, or proceed for review and approval by the OHTN Board, only after the Research Study Team has fully addressed the Governance Circle's concerns.
- review study results, provide interpretation and approve publication and/or public dissemination of results.

Recommend the Research Project Proposal for approval with major revision(s). If so:

- the Research Project Team must revise the proposal as recommended or otherwise respond to the recommendations for revision and re-submit the proposal for further review by the OCS Governance Circle; and
- the proposal will be approved by the OCS Governance Circle, or proceed for review and approval by the OHTN Board, only after the Research Study Team has fully addressed the Governance Circle's concerns including all required revision(s) to the proposal.

Refuse to approve the Research Project Proposal, or to recommend the Research Project Proposal for approval by the Board, with a brief explanation of the reasons for that decision.

6.14 OHTN Board Review and Approval of Research Project Proposals

6.14.1 The OHTN Board has delegated to the OCS Governance Committee its authority under the OCS Scientific Protocol to review and approve Research Project Proposals. Either the OCS Governance Committee or the Principal Investigator and Co-Principal Investigator may, however, recommend that any Research Project Proposal be reviewed for approval by the OHTN Board.

6.14.2 Where the OCS Governance Committee has recommended that a Research Project Proposal be reviewed for approval by the OHTN Board, the OHTN Board or, at its request, the Scientific and Executive Director, will review the proposal and may:

- Approve the Research Project Proposal as proposed.

- Approve the Research Project Proposal with revision(s) to be re-considered for approval by the Board, with such further input as it may request from the OCS Working Group and/or the OCS Governance Committee.

- Refuse to approve the Research Project Proposal, with a brief explanation of the reasons for that decision.

6.15 Once approved, a Research Project Proposal is a "Research Project".

6.16 The Principal Investigator and/or Co-Principal Investigator shall report to the University of Toronto REB on an annual basis the titles of all Research Projects approved by the OCS Governance Committee or the OHTN Board of Directors as falling within the scope of the OCS Scientific Protocol and therefore qualifying for implicit REB approval by the University Toronto, together with a record of the vote for each project (recording the numbers of voted but not the names of those voting).

6.17 Linkage of OCS Data with an External Database for Research Purposes

6.17.1 A Research Project Proposal may seek to link OCS Data with an external database(s).

6.17.2 The OHTN may authorize such a linkage in its review and approval of a Research Project Proposal if the following requirements are met in addition to all other requirements established by this Part:

- the proposal includes a description of the nature and extent of the proposed data linkage and an explanation of why it is necessary for the research;

- the proposal includes a description of the proposed method to achieve the data linkage, which must ensure that only de-identified data is linked to OCS Data; should disclosure of the pseudo-identifiers pertaining to OHTN Participants to persons other than OHTN Staff authorized in accordance with Part 5 above be required as part of this process, this must be clearly stated and explained; [5]

- the proposal includes an assessment of the adequacy of the custodian of the external database's policies relevant to the collection, use, disclosure, privacy, confidentiality, security, retention and destruction of the data to which OCS Data will be linked (as relevant to the proposed linkage), and attaches copies of those policies;

- the proposal includes a draft research or data sharing agreement with the custodian of the external database (or other appropriate entity[6]) to address the collection, use, disclosure, security, return and destruction of the data which:

    - expressly provides that the linked dataset will be subject to these Policies in addition to all other requirements established by the

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5 The OHTN's usual method for collecting de-identified data from external sources of health information into the OCS is described in the OCS Scientific Protocol, and does not require disclosure of the pseudo-identifiers pertaining to OCS participants to any person other than OHTN Staff authorized in accordance with Part 5 above.

6 All parties to such agreements with the OHTN must be individuals or entities with the power and authority to enter into legally binding contracts.

researcher's agreement for the approved Research Project Proposal (section 6.1 above); and

- if the Research Project Proposal is authorized in accordance with this Part, must be signed by all parties before the linkage may proceed; and

- review and approval by the REB of the University of Toronto has been obtained and, if and as required, from other participating institution(s); such a proposal would not qualify for implicit REB approval by the University of Toronto.

6.18 Expedited Review and Approval of Research Project Proposals

6.18.1 The OHTN will expedite its review of a Research Project Proposal only where the results of the proposed research are required to address an urgent health or social issue.

6.18.2 The expedited review of a Research Project Proposal will proceed as follows:

- the Research Project Team must submit a request for expedited review to the OCS Research Coordinator which must include the proposal and an explanation of, and information substantiating, the basis for the request;

- the request will be evaluated by the Principal Investigator and/or Co-Principal Investigator to determine whether expedited review of the proposal is required to address an urgent health or social issue;

- if the request for expedited review is approved, the Principal Investigator and Co-Principal Investigator and the OCS Governance Committee Chair (or his or her designate) will review the proposal and may:

  - approve the Research Project Proposal as proposed;

  - approve the Research Project Proposal with recommendations for revision(s), to be re-submitted for review and approval by the Principal Investigator and Co-Principal Investigator and the OCS Governance Committee Chair; or

  - refuse to approve the proposal on an expedited basis, providing a brief explanation of the reasons for that decision.

6.18.3 The disposition of all requests for expedited review and approval of Research Project Proposals (including the request for expedited review and/or the conduct of the review on an expedited basis) will be reported to the OCS Governance Committee at its next meeting following disposition of any such request or requests

6.19 Amending Research Projects

6.19.1 A Research Project Team must submit a request and all necessary corresponding forms to amend the Research Project if:

- additional data from the OCS or any other source are required to meet the research objectives of the Research Project;

- new research objectives are sought to be added to the Research Project;
- a new investigator is added to the Research Project Team;
- an investigator leaves or is removed from the Research Project Team (see Appendix N - OCS Project Team Change Report);
- there is a change in role of investigators on the Research Project Team (e.g., PI to Co-investigator for example); or
- for any other reason deemed appropriate by the Research Project PI.

6.19.2 Review and approval of proposed amendment(s) to a Research Project will proceed as follows:

- the Research Project Team will submit the proposed amendment(s) to the OCS Research Coordinator for review and approval;
- the Principal Investigator and/or Co-Principal Investigator will review the proposed amendment(s) and may:
    - approve the amendment(s) as proposed;
    - direct that the proposed amendment(s) undergo scientific review by the OCS Scientific Steering Committee and/or community review by the OCS Governance Committee;
    - direct that the proposed amendment(s) undergo review and approval by the REB of the University of Toronto and/or other participating institution(s) if and as required; and/or
    - refuse to approve the proposed amendments, providing a brief explanation of the reasons for that decision.

6.19.3 The disposition of all proposed amendments to Research Projects will be reported to the OCS Governance Committee at its next meeting following consideration of the amendments. The disposition of proposed amendments for those Research Projects approved by the OHTN Board will also be reported to the OHTN Board at its next meeting following consideration of the amendments.

7 Release of OCS Data

7.1 The OHTN will disclose to authorized OHTN Staff and to Research Project PIs (or their Research Project Team members) only that OCS Data which has been approved for collection, use and/or disclosure in accordance with Parts 5 or 6 above.

7.2 The OHTN will disclose approved OCS Data in a release format that provides OCS Participants with the greatest possible protection of their privacy and confidentiality while still meeting the administrative and/or research purposes for which the collection, use and/or disclosure of OCS Data have been authorized.

7.3 A risk of residual disclosure exists for the purposes of these Policies if it is reasonably foreseeable in the circumstances that the OCS Data proposed or authorized for release could be used, either alone or with other information, to reveal previously unknown information about an OCS Participant or participants including the identity of one or more OCS Participants.

7.4 OCS Data elements considered to present an increased risk of residual disclosure of OCS Participants are listed in Appendix J. To minimize any risk of residual disclosure to OCS Participants presented by these data elements, the OHTN's Standard Release format for OCS Data will disclose each data element only in a categorized format, meaning that the data pertaining to each such element have been aggregated for observation and/or release in minimum cell sizes of six (6).

7.5 The OHTN will prepare and release OCS Data to authorized OHTN Staff, and Project Study PIs (or Research Project Team members) only in Standard Release format unless:

7.5.1 the release of OCS Data in Conditional Release format has been specifically authorized in writing in accordance with these Policies; or

7.5.2 the release of OCS Data is to an OHTN Staff Scientist in accordance with section 6.6.1 above.

7.5.3 the release of OCS Data is to an authorized student/trainee. The student/trainee must:

- be specifically authorized by the OHTN Scientific & Executive Director in writing,
- be supervised by an OHTN Staff Scientist,
- be trained by authorized OHTN Staff on how to prepare a Standard Dataset, and
- have their OCS Standard Dataset reviewed by authorized OHTN Staff, and documented in the Request for Off-Site Data Use by Students/Trainees Form as listed in Appendix K.

7.6 OCS Standard Dataset reviewed by authorized OHTN Staff, and documented in the Request for Off-Site Data Use by Students/Trainees Form as listed in Appendix K. OCS Data released in Conditional Release format may include one or more of the OCS Data elements listed in Appendix F in individual-level format, meaning that the data pertaining to each such element are related to a single individual and have not been categorized for observation and/or release.

7.7 Authorized OHTN staff will prepare and release OCS Data elements. When an authorized student/trainee prepares the OCS Data elements, the student/trainee must:

- be specifically authorized by the OHTN Scientific & Executive Director in writing (Appendix K),
- be supervised by an OHTN Staff Scientist,
- be trained by the authorized OHTN staff on how to prepare a data cut, and
- have the OCS Data elements reviewed, including a risk of residual disclosure assessment, by authorized OHTN staff prior to data shipment and documented in the Request for Off-Site Data Use by Students/Trainees Form (Appendix K).

8 Student Datasets

8.1 A Student Dataset is a practice dataset that instructors of biostatistics, epidemiology and other related courses or workshops may provide to students to illustrate the application of quantitative methods to data and to enable students to enhance their programming and analytical skills.

8.2 To permit the creation of a Student Dataset, OHTN Staff must develop an exploratory analysis and Student Dataset development plan, and must submit that plan to the Principal Investigator and Co-Principal Investigator for review and approval.

8.3 Student Datasets are exempt from the *OCS Minimum Data Security Requirements for Researchers* (Appendix J), and are guided instead by the following requirements to ensure the anonymity of all OCS Participants:

8.3.1 Student Datasets must not be used for OCS-related research.

8.3.2 Student Datasets must contain only the minimum number of data elements required for the sample exercise. Only a randomly selected subset of OCS Participants shall be included in the dataset, and each OCS Participant must be assigned a randomly-generated, non-identifiable study number.

8.3.3 Sensitive variables must be categorized or modified so that cell sizes are always greater than 20.

8.3.4 All dates must be randomly adjusted.

8.3.5 Users of Student Datasets must not publicly disseminate any results of analyses other than in course-related material or discussion.

8.3.6 Datasets must be clearly marked as sample data and contain the following statement: *"The sample data included in this dataset are derived from original data collected in the Ontario HIV Treatment Network Cohort Study (OCS). The OCS Data have been modified and re-categorized in order to ensure the anonymity of OCS participants. Users of this sample dataset must not publicly disseminate any results of analyses based on these data other than in course-related material or discussion."*

8.3.7 Instructors and students must destroy all Student Datasets when they are no longer required for course use.

8.3.8 Course instructors authorized by the OHTN to receive a Student Dataset(s) must sign a confidentiality agreement with the OHTN before obtaining access to the dataset(s), which shall include the terms and conditions set out in this section and any additional terms and conditions to govern use of the Student Dataset as may be considered appropriate by the Principal Investigator and Co-Principal Investigator who approved the development and use of the Student Dataset(s).

8.4 The development and approval of each Student Dataset approved by the Principal Investigator and Co-Principal Investigator must be reported to the OCS Governance Committee at its next meeting following the approval.

9 Publication/Presentation and Reporting Requirements

9.1 Subject only to section 9.2 below, to minimize any risk of residual disclosure to OCS Participants, Research Project Teams must report their results in minimum cell sizes of six (6) and, with respect to cells sizes of five (5) or fewer, either:

9.1.1 suppress these cells; and/or

9.1.2 incorporate these cells into other result categories.

9.2 On an exceptional basis, upon application by a Research Project PI and following consultation with the OCS Governance Committee, the Principal Investigator and/or Co-Principal Investigator may authorize the reporting of results in a format that does not meet the requirements of section 9.1 but otherwise minimizes any risk of residual disclosure to OCS Participants. A Research Project PI seeking this exceptional authorization must apply for, and receive, the decision before submitting a report that does not comply with section 9.1 to any person for consideration for publication or other manner of presentation.

9.3 Research Project Teams to which OCS Data have been disclosed in Standard Release format must:

9.3.1 provide to the OCS Research Coordinator a copy of every Report, as soon as possible following its submission for publication or other manner of presentation;

9.3.2 report to the OCS Research Coordinator, as soon as possible once the outcome of a submission is known and prior to publication, the outcome of every submission in section 9.3.1 including a copy of every Report as revised for publication or other manner of presentation.

9.4 OCS Data that have been disclosed to Research Project Teams in Conditional Release format, or have otherwise been determined to present a risk of residual disclosure, are subject to more stringent requirements in relation to all Reports prepared using that data:

9.4.1 the Research Project PI (or Research Project Team designate) must provide a copy of every Report to the OCS Research Coordinator as soon as possible following its submission for publication or other manner of presentation;

9.4.2 the OCS Governance Committee will review every such Report as soon as possible prior to publication or other manner of presentation to determine whether it presents a risk of residual disclosure;

9.4.3 OCS Staff will communicate to the Research Project PI (or Research Project Team designate) all concerns identified by the OCS Governance Committee and all related recommendations to ensure that, prior to publication or other manner of presentation, the author(s) of the Report eliminate all identified risk(s) of residual disclosure presented by the Report; and

9.4.4 the Research Project PI (or Research Project Team designate) must report to the OCS Research Coordinator, as soon as possible once the outcome of a submission is known and prior to publication, the outcome of every submission in section 9.4.1 including a copy of every Report as revised for publication or other manner of presentation.

9.5 The OCS Research Coordinator will communicate information received pursuant to sections 9.3 and 9.4 above to the OCS Governance Committee and OHTN Board on a regular and timely basis.

9.6 Research Project PI agrees to provide to the OHTN an annual progress report on the status of the Research Project, such report to be in the form attached as Appendix M – OCS Project Progress Report Form.

9.7 The Research Project PI may act as the corresponding author for a Report or ask that another member of the Research Project Team assume this role as his or designate.

9.8 The corresponding author for a Report should handle media inquiries related to the Report's research findings and should notify the OCS Research Coordinator as soon as possible before the publication of a media release or newscast pertaining to the Report.

9.9 The OHTN strongly discourages any discussion of unpublished research or Reports by any person with the media without the express approval of the OHTN's Scientific and Executive Director.

9.10 Upon request and with prior notification, the corresponding author or Research Project PI of a Research Project may refer related media inquiries to the OHTN.

9.11 The OHTN reserves the right issue a public statement (e.g., media release) pertaining to any Research Project or related Report.

9.12 If the final version of any Report authored by the OHTN or the Principal Investigator and/or Co-Principal Investigator (including Reports of which one or both are co-authors with one or more persons) and accepted for publication in a peer-reviewed medical and/or scientific journal, in any format and on any media (including print, electronic and digital) contains, or is otherwise based on the use of, OCS Data provided to the OHTN pursuant to an agreement with Public Health Ontario, then as soon as reasonably possible prior to publication the OHTN will:

9.12.1 provide or will cause the Principal Investigator and/or Co-Principal Investigator (as relevant) to provide, to Public Health Ontario a copy of that Report on print media and in such electronic or digital format as may be requested by Public Health Ontario; and

9.12.2 make best efforts to cause the Principal Investigator and/or Co-Principal Investigator (as relevant) to grant to Public Health Ontario a non-exclusive, perpetual, irrevocable, world-wide, royalty-free, sub-licensable license to use, reproduce, copy, translate, publish on its own intranet and on the Internet, and to distribute, without cost, any and all Reports that have been provided to Public Health Ontario and to authorize others to do so on behalf of Public Health Ontario.

9.13 In the case of the final version of any Report which: (1) contains, or is otherwise based on the use of, OCS Data provided to the OHTN pursuant to an agreement with Public Health Ontario; (2) is authored by a person or persons other than the OHTN or the Principal Investigator and/or Co-Principal Investigator; and (3) has been accepted for publication in a peer-reviewed medical and/or scientific journal, in any format and on any media (including print, electronic and digital);

then as soon as reasonably possible prior to publication the OHTN will make best efforts to cause the author(s) of the Report to grant the license described in section 11.8.2 above to Public Health Ontario.

9.14 Copies of Reports in the custody or control of Public Health Ontario are subject to the *Freedom of Information and Protection of Privacy Act* (Ontario), as amended or replaced from time to time.

10 Authorship

10.1 The OHTN anticipates that, in general, all Reports pursuant to a Research Project will be co-authored by all members of the Research Project Team. The Research Project Team may also include as a named author of such Reports ("author") a person or persons who are not members of the Research Project Team such as OCS site investigators, OCS Staff and others who have made significant scientific contributions to the research.

10.2 The OHTN endorses the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* established by the International Committee of Medical Journal Editors (www.icmje.org) and expects that all Reports pursuant to a Research Project will meet these requirements.

10.3 All authors of a Report must take public responsibility for its content.

10.4 One or more authors of a Report should take responsibility for the integrity of the work as a whole, from inception to publication or other manner of presentation.

10.5 Each author of a Report must contribute significantly to its development. An individual must contribute in at least one area of each of the categories numbered as 1, 2 and 3 below to qualify for authorship:

- Conception and design (1);
- Acquisition of data (1);
- Analysis and interpretation of data (1);
- Drafting of the manuscript (2);
- Critical revision of manuscript for important intellectual content (2);
- Statistical analysis (3);
- Obtained funding (3);
- Administrative, technical or material support (3);
- Supervision (3); and

- Other (3).

10.6 All authors of a Report must be involved in its editing, as follows:

10.6.1 Manuscripts must be sent to all authors for review prior to submission for publication or any other manner of presentation.

10.6.2 If an author disagrees with any aspect of the content of a manuscript, he or she must resolve the issue(s) with all other authors before the manuscript is submitted for publication or other manner of presentation;

10.6.3 If resolution cannot be achieved, the dissenting author(s) must report the issue(s) to the OCS Research Coordinator for consideration by the Principal Investigator, Co-Principal Investigator and Chair of the OCS Scientific Steering Committee for consideration of the issue(s) and related recommendations to the authors. If resolution still cannot be achieved, the dissenting author(s) may:

- submit a request to the Research Project PI to be removed as author(s) of the Report before the Report is submitted for publication or presentation; and/or
- seek resolution of the dispute by some other means.

10.7 The submission for publication or presentation of Reports that have not been reviewed by all authors is inconsistent with the spirit of collaborative research. Should an author(s) disregard this policy, he or she may be denied future access to the OCS Data.

10.8 The Research Study PI is responsible for working in a collaborative manner with all authors of a Report to decide on the order of authorship and, if required, should provide a written explanation as to how the order of authorship was determined.

10.9 The "OHTN Cohort Study Team" (section 2.3 below) must be included as a group author of all Reports.

11 Acknowledgements

11.1 Using the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* and subject to section 11.4 below, the authors of a Report should identify in an "Acknowledgements" section all individuals who contributed to the Report in a material way but do not meet the criteria for authorship. Examples of such individuals include: persons who provided purely technical help or writing assistance; a department chair who provided only general support; and persons providing financial and material support. Groups of individuals who contributed materially to the Report, but whose contributions do not justify authorship, may be identified under a heading such as "Clinical Investigators" or "Participating Investigators" and their function or contribution briefly described (for example: "served as scientific advisors"; "critically reviewed the study proposal"; "collected data"; or "provided and cared for study patients").

11.2 Subject to section 11.4 below, the authors of a Report must include in the Acknowledgements section of the Report the names of all members of the OHTN Cohort Study Team as listed in section 2.3 above.

11.3 Subject to section 11.4 below, the authors of a Report must also include the following paragraph in the Acknowledgements section of the Report:

> **"We gratefully acknowledge all of the people living with HIV who volunteered to participate in the OHTN Cohort Study. We also acknowledge the work and support of OCS Governance Committee, Scientific Steering Committee, and Indigenous Data Governance Circle members: Adrian Betts, Aaron Bowerman, Cornel Grey, Dane Record, John Goodhew, Michael Wilson, Lance Mcready, Sean Hillier, Ruth Cameron, YY Chen, David Brennan, Ann Burchell, Curtis Cooper, Trevor Hart, Mona Loutfy, Kelly O'Brien, Lawrence Mbuagbaw, Pierre Giguere, Anita Benoit, Randy Jackson, Meghan Young, Trevor Stratton, and Sergio Rueda. The OHTN also acknowledges the work of past Governance Committee and Scientific Steering Committee members. We thank all the interviewers, data collectors, research associates and coordinators, nurses and physicians who provide support for data collection. The authors wish to thank the OCS staff for data management, IT support, and study coordination: Mustafa Karacam, Nahid Qureshi, Riya Michael, Tsegaye Bekele, The OHTN Cohort Study is supported by the Ontario Ministry of Health."**

11.4 Given that readers may infer that individuals acknowledged by name in a Report endorse its data and conclusions, some journals require that all persons acknowledged in a Report be asked for their permission to be recognized. In such circumstances, only the names of those who provide their prior written consent should be included.

11.5 The authors of a Report must include the following statement in the Report:

> **"The opinions, results and conclusions are those of the authors and no endorsement by the Ontario HIV Treatment Network is intended or should be inferred."**

The OHTN reserves the right to request that any acknowledgement or other statement mentioning the OHTN be excluded or removed from any Report. If the final version of any Report accepted for publication in a peer-reviewed medical and/or scientific journal, in any format and on any media

(including print, electronic and digital) contains, or is otherwise based on the use of, OCS Data provided to the OHTN pursuant to an agreement with Public Health Ontario,[7] the authors of the Report must acknowledge the support of Public Health Ontario while indicating that the views expressed in the Report are those of the authors and do not necessarily reflect those of Public Health Ontario, as follows:

> "We also acknowledge the Public Health Ontario, for supporting record linkage with the HIV viral load database. The opinions, results and conclusions are those of the authors and no endorsement by the Ontario HIV Treatment Network or Public Health Ontario is intended or should be inferred."

[7] See section 3.2.3 above, footnote 1.

Intellectual Property

11.6 The OHTN retains all intellectual property rights, title and interest in all Reports authored solely by OHTN Staff during the course of their employment or other contractual duties to the OHTN, unless otherwise agreed in writing by the relevant parties.

11.7 The OHTN may assign its intellectual property rights, title and interest in all Reports, in whole or in part, to such other individual(s), corporations or other entities as it may consider appropriate unless otherwise agreed in writing by the relevant parties.

11.8 The OHTN does not retain, and will not claim, any intellectual property right, title or interest in any Report authored solely by persons other than OHTN Staff during the course of their employment or other contract duties with the OHTN.

11.9 The OHTN will share equally ownership of all intellectual property rights, title and interest in all Reports produced by the collaboration of OHTN Staff during the course of their employment or other contractual duties to the OHTN and any other persons and in which the contribution of one author is not distinct from the contribution of the other author(s).

Appendix A – Glossary of Terms

Aggregate-level data (or format)

Data that have been compiled from record-level data to a level of aggregation (minimum units of observation greater than five) with the objective of preventing the identity of individuals from being determined by any reasonably foreseeable method.

Authorized OHTN Staff

OHTN staff who have been trained and are experienced in preparing OCS data cuts and assessing risk of residual disclosure and are authorized to sign on behalf of the OHTN Scientific & Executive Director.

Collect

To gather, acquire, receive or obtain information by any means from any source.

Community

As defined by the OCS Scientific Protocol, "community" means people living with HIV and community-based organizations and groups that provide services for, or advocate on behalf of, people living with HIV and those at risk.

De-identified

"De-identify" means to remove any information that identifies the individual or for which it is reasonably foreseeable in the circumstances that it could be used, either alone or with other information, to identify the individual; "de-identified" has a corresponding meaning.

Destroy

To physically render unavailable and irretrievable data on all print and other hard copies by breaking them down with an appropriate method or; to erase, scrub, repeatedly overwrite, or otherwise remove all electronic, digital or other versions of it from every item of equipment and all media (including disks, tapes, computers, servers and peripheral equipment such as disk arrays, tapes or disk backup units) on which it has existed, so that the data are rendered irretrievable and cannot be recovered in any way or through any present or future method or technique; 'destruction' has a corresponding meaning.

Disclose

To release or make available information or to release it to another person, but does not include to use the information.

Implicit Research Ethics Board (REB) Approval by the University of Toronto

The University of Toronto Research Ethics Board has conveyed to the OCS Governance Committee its authority to determine whether a Research Project Proposal submitted by an investigator(s) affiliated with the University of Toronto falls within the scope (i.e., principal aims) of the OCS Scientific Protocol (Appendix B). If so, the proposal may be deemed to have implicit REB approval and may be approved by the OCS Governance Committee to proceed without the need for a separate application for REB approval by the University of Toronto.

On an annual basis, the OHTN's Principal Investigator and/or Co-Principal Investigator must report to the University of Toronto REB the titles of all Research Projects approved by the OCS Governance Committee or the OHTN Board of Directors as qualifying for implicit REB approval by the University

Toronto, together with a record of the vote for each project (recording the numbers of voted but not the names of those voting).

Individual-level data (or format)

Data for which each record relates to a single individual.

OCS Database

The OCS is a prospective, longitudinal, observational database into which de-identified health and other information are collected from OCS Participants for the purpose of scholarly research.

OHTN Cohort Study (OCS) Participant

A person diagnosed with HIV who has been enrolled into the OCS on a voluntary basis following review and signature of the consent form approved by the Research Ethics Board of the University of Toronto and of other participating institutions, allowing his or her de-identified health and other information to be collected into the OCS Database and used and disclosed for the purpose of scholarly research in accordance with the OCS Scientific Protocol.

OCS Scientific Protocol

The OCS Scientific Protocol approved by the Research Ethics Board of the University of Toronto and of other participating institutions establishes the nature and objectives of the OCS, the public and scientific benefit to be achieved by the OCS and other related matters. A copy of the OCS Scientific Protocol is attached as Appendix B.

OCS site investigators

OCS site investigators are the individuals primarily responsible for the collection of data into the OCS at each of the contributing sites. A current list of OCS site investigators is available on the OCS website (www.ohtncohortstudy.ca).

OHTN mission

The OHTN's mission is, "through a network that promotes research and evidence to drive change, (to) improve the health and well-being of people living with and at risk of HIV in Ontario."[8]

OHTN principles

The OHTN's work is guided by the following principles:

- partnership, collaboration and respect
- relevance and timeliness;
- greater involvement of people with HIV;
- social justice and equity

[8] *OHTN Strategic Plan to 2015*, p.4

- diversity
- Integrity and accountability
- excellence and innovation; and
- impact.[9]

OHTN Staff

OHTN Staff includes employees of the OHTN and their delegates, who may include either OHTN employees or independent contractors engaged by the OHTN. This term includes OHTN Staff Scientists, all of whom are OHTN employees.

OHTN Staff Scientists

OHTN Staff Scientists are scientists employed by the OHTN who conduct scholarly research as part of their role within the organization.

Pseudo-identifier (or pseudo-ID)

A unique identifier for each OCS participant generated by the OHTN using a non-reversible mathematical formula to combine the participant's health card number plus date of birth (if available) or name plus date of birth (if health card number is not available).

Report

The term "Report" means any written material:

- that contains, or is otherwise based on the use of, OCS Data; and
- is intended for publication or any other manner of presentation by any person in any public forum, in any format and on any media including, but not limited to, academic journals and conferences, dissemination through websites etc.

Scholarly Research

As defined by the OCS Scientific Protocol, scholarly research is research that aims primarily at establishing fact, principles or generalizable knowledge, which are of social value and intended to be publicly disseminated. Scholarly research must be consistent with established ethical standards and principles.

Use

Use, in relation to de-identified data in the custody or control of the OHTN means to handle or deal with the information or to apply the information for a purpose and includes reproducing the information but does not include disclosing the information.

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[9] *Ibid.*, p.5

Appendix B – OCS Scientific Protocol

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THE ONTARIO HIV TREATMENT NETWORK COHORT STUDY[10]

BACKGROUND AND SIGNIFICANCE

Human immunodeficiency virus (HIV) disease and acquired immunodeficiency syndrome (AIDS) are relatively new medical conditions. Although the epidemic is only in its third decade, the changing epidemiology of the disease has created many challenges for health care planners, practising clinicians, government officials, and researchers. HIV disease progresses from latent infection, identified only by laboratory evidence in otherwise healthy asymptomatic individuals, to AIDS, characterized by severely compromised immunologic function. With the advent of antiretroviral treatment (ART) and prophylaxis for major opportunistic infections, the clinical history of HIV infection began to change. This change continues as therapies become more widely available and are utilized during asymptomatic infection. The impact of these agents on the clinical manifestations of HIV infection requires long-term study. Other issues of particular interest include optimal nature and timing of ART, quality of life, and health service access and utilization. There is an urgent need to gain a better understanding of the entire course of HIV infection. To accomplish this, a widespread systematic collection of information on persons living with HIV (PHAs) is required. Data must be collected on an ongoing basis in order to ensure a meaningful account of changes in the clinical history of HIV disease. In addition, a more creative approach to the utilization of existing data sources must be developed. The province of Ontario compiles statistics on HIV from a number of sources at various stages of the disease process. However, the discontinuity of currently collected data hampers research on the epidemic and efforts to evaluate quality of care and quality of life for patients. An HIV observational database can address this limitation directly by systematically compiling information on the progression of HIV infection and enabling linkage among other available sources of data.

The resulting database and linked data can be utilized by clinical scientists, health services and population health researchers, health planners, and community-based researchers whose studies could prove valuable for planning and evaluating health-related services, comparing the effectiveness of various clinical interventions, and describing the clinical profile and history of the disease. Using a large database, it may also be possible to detect some rare or new cases of the disease. For instance, individuals with opportunistic infections or adverse reactions to medications that are infrequent or uncommon may be considered as single aberrations from the expected

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1 [10] **Formerly, The HIV Ontario Observational Database (HOOD) and The HIV Information Infrastructure Project Central Research Database**

clinical spectrum, and thus not reported. However, such information collected on a large scale may make it possible to detect patterns of unusual occurrences.

THE HOOD PROJECT

Since the initial inception of the HIV Ontario Observational Database (HOOD) Project, more than 7,000 patients have voluntarily enrolled and consented to data collection. This has required extensive resources to collect and manage the data, and it has proven difficult to do this in a timely fashion that allows data to be kept up to the extraction schedule. Currently, data are collected from medical records by trained professionals directly into an electronic database. However, the scheduling of data collection every 6 months means that there is always a lag time of a few months in data availability. The difficulty of having complete and timely data available for research was originally exacerbated by the fact that few resources were initially available to pay for the design and development of the database, so that a relatively inexpensive but cumbersome design was adopted. This has since been updated to make the data much easier to collect and more accessible for research once they are entered into the database. The OHTN Cohort Study (OCS) receives all of its core infrastructure funding from, and is physically housed by, the Ontario HIV Treatment Network (OHTN).

As part of the overall mandate, the OHTN has been engaged in three major components:

- Development and support of electronic medical records in the offices of physicians providing HIV care in Ontario, in order to improve quality of care and access to information for care providers and patients;

- Support of the OCS, aggregating and managing existing data and developing and maintaining secure a high quality data system; and

- Development of a secure electronic communication network between HIV care providers and for data transmission between care sites and the OCS.

The OCS is now implemented, incorporating electronic data collection through secure data transfer from computerized medical records, as well as seeking agreements to obtain linkages to other databases (e.g., The Canadian Institute for Health Information (CIHI), The Institute for Clinical Evaluative Sciences (ICES) etc.) through secure transfer of electronic data.

The OCS will enrol participants in sites using computerized medical records or Clinical Management Systems (CMS), seeking consent to allow transfer of their CMS data to the OCS for research purposes. HOOD participants were asked to transfer their HOOD data to the new OCS and/or to continue to participate in the OCS using medical chart extraction technologies. The types of data obtained from these computerized records will be similar to those presently obtained in HOOD (demographics, HIV testing history and related risks, medical diagnoses, drug therapies, adverse drug reactions, laboratory tests, etc.), as well as some additional information such as billing information for economic analyses. A rigorous process of creating encrypted unique identifiers (Pseudo-IDs), and other privacy and security controls, will be used so that it will be

possible to link an individual's data over time and link to other databases provided they are able to create the same encrypted identifiers, but OCS participants will remain anonymous.

In addition, all data will be reversibly encrypted/scrambled (by a different process) prior to transmission as an extra level of data security, and decrypted on arrival at the research database. This protects the data during transmission in case of interception. It can only be decrypted using the appropriate key on receipt at the OHTN.

SUMMARY

While there is disparate information about HIV collected in the province, a need exists for a sound basis for modelling or studying HIV infection across its entire spectrum. An observational database can successfully merge the available information and provide such a basis. The HOOD aimed to provide not only a unifying link between disparate information systems but also an empirical platform from which investigators in a number of HIV-related areas of research could proceed. The OHTN created the OCS, which comprises data extracted electronically from CMS and data extracted to an electronic database from paper medical charts (formerly the HOOD), as well as self reported data through questionnaires. All of this information being collected will be housed in the OCS's database. The OCS provides a major source for sharing a wide range of raw data among researchers that can allow researchers to address a range of crucial questions pertaining to the ongoing HIV epidemic in Ontario in a rapid and coordinated fashion.

PURPOSE

The purpose of the OCS is to collect information on the clinical and health profiles of people living with HIV (PHAs) in Ontario, in order to provide a robust information resource for clinical, socio-behavioural, population health, and health services research in HIV.

OCS PROGRAM OF RESEARCH: THE DEVELOPMENT OF PRINCIPAL AIMS AND OBJECTIVES OF THE OCS BY THE SCIENTIFIC STEERING COMMITTEE

The OCS has developed a Scientific Steering Committee (SSC) to develop, refine, and oversee the ***OCS Program of Research***. Membership includes representatives from OCS data collection sites, a member of the OCS Governance Committee, community representatives, and senior HIV researchers in Ontario.

In the section below, we describe the ***OCS Program of Research*** developed by the SSC. This includes the three major Principal Aims and Objectives that are within the scope for the ***OCS Program of Research***.

PRINCIPAL AIM I: SOCIAL-BEHAVIOURAL, HEALTH SERVICES AND POPULATION HEALTH

Background and Significance: A social determinants or social epidemiologic approach to health begins with the examination of the distribution of disease within populations by markers of social status and position (Berkman & Kawachi, 2000; Krieger, 2001). Proponents of the approach argue there are important etiological messages to be found in the examination of these associations

(Turner, 2003). While the framework has been applied to understanding the origins (causes) of disease, it is also a useful lens through which to examine the consequences of illness and disease for specific groups in the population. As stated above, as increasing survival rates for HIV have shifted the disease from an acute condition to a chronic illness, concern of quality, not just quantity, of life has become paramount.

Because the disease strikes a socially heterogeneous population men having sex with men (MSM), women, immigrants from endemic countries, people who inject drugs (PWIDs)), it is important to know how these status differences influence health and well-being in PHAs. A major theme, in this regard, is the role that social disadvantage and marginalization play in affecting quality of life and secondary health considerations (mental health, subjective well-being) in PHAs in Ontario. Among the most important manifestations of social disadvantage is poverty, especially reflected by factors such as unstable and/or inadequate housing, and in the direct experience of discrimination and prejudice. These factors have long been accepted as important determinants of well-being in the general population (Dunn, 2002), and are increasingly recognized as important determinants of health among HIV infected persons.

Research on the health consequences of stigma and discrimination outside HIV have established the importance of considering inter-group variation, especially between ethno-cultural populations, in the impact of protective or resiliency factors (Noh et al., 1999). So, while we may expect the impact of poverty to be deleterious to health regardless of social standing, not all groups affected by HIV will be equally exposed to poverty (or discrimination), or equally equipped (socially or individually) to cope with the challenges of social disadvantage. For example, the experience of stigma and discrimination in different vulnerable groups may be different because we expect the impact of HIV-related discrimination to be different for MSM than for women or for persons from visible minority groups. These fundamental issues have profound implications for intervention. If stigma and discrimination, and/or the factors that mitigate their impact, differ across groups, it will be important to develop targeted interventions that are sensitive to the needs of specific populations. Our approach starts with the unique social experiences of different groups of individuals affected by HIV in Ontario, and seeks to better understand how this diversity influences health and well-being.

Theoretical Model Development and Context: While there is not one single theoretical approach or model that can hope to capture the richness of how social experience, rooted in structural disadvantage, influences health and well-being, there are some useful heuristic devices that can be employed to begin to map out the complexity of social determinants of health in HIV. The stress process model, as articulated by Pearlin (1989), is one such device. This model has been widely used already, for example, to examine the mental health consequences of discrimination in diverse racial and ethno-cultural populations (Noh et al., 1999; Noh and Kaspar, 2003; Taylor and Turner, 2002; Williams et al., 2003). It has also been used to explain social disparities (e.g., social class and gender differences) in psychological distress and disorder in the general population (Turner, Wheaton and Lloyd, 1995; Turner and Lloyd, 1999).

The stress process model challenges us not only to consider the direct effect of stressors such as inadequate housing, poverty and discrimination on health outcomes, but also the potential mediating and moderating factors that influence the impact of stress on health, illness and disease. Protective factors such as social support, or personal resources such as mastery or self-esteem,

may act as buffers in the stress-health relationship. Mediating risk factors such as negative cognitive appraisals or secondary stressors that arise from the experience of primary stressors such as discrimination can be used to help understand how and why social disadvantage leads to poor health and well-being. However, our interest is not limited to individual-level risk factors; we believe that community or social structural variables including immigration status (especially from endemic countries), and the availability of community-level support networks (formal and informal), may also influence the association between social stressors and well-being in PHAs. Our guiding model will include both structural (population) and individual-level risk and protective factors so that we may better understand the process of social disadvantage as experienced by people affected by HIV. Finally, as reflected in work by Turner and his colleagues (1995; 1999; 2003), and as originally articulated by Pearlin (1989), the stress process framework also challenges us to explore stressors arising from position in the social structure of society, rather than stressful experiences that are more random (e.g., exposure to natural disasters). While they are potentially harmful, exploration of the impact of such stressors offers little help in better understanding how life circumstances and opportunities, rooted in social position, shape health and illness. This is the principal aim of the present program of research – how do the life circumstances of PHAs influence their health and well-being as they struggle to cope with this life-threatening, chronic disease? What factors, personal and social, influence well-being?

PRINCIPAL AIM IA: TO UNDERSTAND HOW SOCIAL AND HEALTH INEQUITIES STRUCTURE VULNERABILITY TO HIV

Objectives: i) To examine the social context of HIV, paying particular attention to what has been referred to as the social determinants of health and well-being. Specifically, we are interested in the influence of social conditions, especially structural positions, on the health and well-being of PHAs in Ontario. By social conditions, we mean the social positions that people hold (both achieved and ascribed) such as race/ethnicity, gender orientation, socio-economic status (education, occupation, income, employment status), and age. The social conditions approach, however, also includes process or resource variables such as social support, resiliency factors such as sense of personal control, and social capital. The approach we have adopted recognizes the importance of reciprocal pathways – i.e., we are interested in social conditions and structural locations as both causes and consequences of health and illness in the population. Such questions can only be explored with longitudinal data, such as that collected by the OCS. Our principal objective is to examine the role that poverty, social marginalization, stigma, social support and community involvement, and employment (including volunteering) plays both in disease progression, and in secondary health outcomes related to quality of life, mental and physical health, and subjective well-being.

PRINCIPAL AIM IB: TO UNDERSTAND ISSUES RELATED TO HEALTH SERVICES USE AMONG INDIVIDUALS LIVING WITH HIV IN ONTARIO

Objectives: (i) To improve the effectiveness and quality of HIV health care in Ontario; (ii) To determine costs of HIV-related care and treatment in Ontario to provide information needed by health policy decision makers; (iii) To determine factors affecting access to, and retention in, HIV care among different populations of people living with HIV, including but not limited to women, African, Caribbean, and Black (ACB), gay and bisexual men, and other men who have sex with men, and Indigenous populations, and PWIDs. Secondarily, we are also interested in encouraging

and supporting researchers to conduct HIV health services research involving the linkage of the OCS to administrative datasets (Ontario Health Insurance Plan (OHIP), CIHI, Ontario Drug Benefit (ODB)) through our ongoing data sharing agreement with the Institute of Clinical Evaluative Sciences (ICES).

PRINCIPAL AIM IC: TO UNDERSTAND ISSUES RELATED TO MENTAL HEALTH AND ADDICTIONS AMONG INDIVIDUALS LIVING WITH HIV IN ONTARIO

Objectives: (i) To determine the prevalence of serious mental illness and addictions among HIV positive individuals; (ii) To determine the risk factors that lead to mental health problems; (iii) To explore factors that promote resiliency in the face of stress and adversity which lead to positive well-being; and (iv) To examine the impact of mental health and addiction problems on the clinical course of HIV infection. As noted above, we will use the stress process framework (Pearlin, 1989) to examine both risk and protective factors that are associated with mental health and addictions issues. We will explore factors at the individual (e.g., sense of control), social (e.g., social support), and community (e.g., supportive services available) levels.

PRINCIPAL AIM II: CLINICAL AND HEALTH OUTCOMES

Background and Significance: HIV infection has been present in our populations for more than 30 years. Both the epidemiology and natural history of HIV infection have changed dramatically in that period. What was an incurable disease with very high mortality is now treatable, and with that comes a new set of complications and care and management issues. The prevalence of HIV in specific populations has also changed dramatically in Ontario. HIV used to primarily affect the gay male community, but is increasingly affecting women, PWIDs, and populations from endemic countries, many of whom are socially disadvantaged.

Treatment for HIV infection has improved over the past 25 years. However, optimal treatment strategies remain elusive, and adverse events, side effects, pill burden, and drug interactions make the use and effectiveness of ART extremely complex. Long-term use of ART, and therefore survival, has resulted in increasing rates of liver, heart, lung, renal, and neurological disease, as well as malignancies, in those with HIV infection.

While HIV treatment is widely available, some sectors of our population are not diagnosed with HIV infection until their advancing immune dysfunction or co-morbidities such as tuberculosis, hepatitis C, or other sexually transmitted infections are identified (SRAD, CIDPC, PHAC, 2006; Remis, Swantee, Schiedel, Fikre, & Liu, 2006). It is important to understand the lag between infection and diagnosis, so that policies can be developed to encourage specific populations at risk for HIV to seek early diagnosis.

While there have been significant reductions in opportunistic infections and morbidity and mortality due to ART (Palella et al., 1998; UNAIDS, 2019), there remains a portion of the population at risk for HIV that does not seek early diagnosis and therefore, access to treatment (SRAD, CIDPC, PHAC, 2006; Remis, Swantee, Schiedel, Fikre, & Liu, 2006; Haddad et al., 2018). It is important to investigate those populations that are diagnosed late in their infection so that policies and practices can be reviewed and modified to encourage those at risk for HIV to be tested. Others have reported that the natural history of HIV has changed over time and that newer

subtypes of the virus may be either more aggressive or less aggressive in their ability to cause immunodeficiency (Chan, Galli, Montaner, & Harrigan, 2003; Palm et al., 2013).

There are now several classes of anti-retroviral drugs, each bringing a different set of complications to the care and management of HIV infection. No doubt these drugs improve immunologic function and reduce HIV disease and mortality (Palella et al., 1998; UNAIDS, 2019), but serious side effects, adverse events, adherence issues, and treatment failure remain significant problems (Carr, 2002). The role of alternative and complementary medicines, as well as nutrition and micronutrients (Kaiser, Campa, Ondercin, Leoung, Pless, & Baum, 2006), and other lifestyle and harm reduction issues is not clearly defined, and exploring these issues may guide recommendations that will affect/improve treatment guidelines.

HIV is a virus that is inherently prone to developing genetic mutations. This characteristic arises because of the biological mechanisms involved in viral replication for retroviruses. In most organisms, a specific enzyme corrects spontaneous errors occurring during the copying of genetic material, but this action does not occur in retrovirus replication. The mutations that occur during replication can be lethal (in which case progeny will not be produced), silent (have no effect on the virus) or may alter the virus' physical or biochemical characteristics. HIV is known to have many subtypes that have arisen because of the mutability of the virus. The ability of HIV to replicate in the presence of ART (drug resistance) is one of the outcomes of the spontaneous mutations that occur.

Many technologies have become available to sequence the HIV genome. Exploring HIV mutations has allowed scientists to attribute specific mutations to the evolution of specific drug resistance, and there has been significant research regarding the nature of mutations and the biological properties they confer with respect to HIV drug resistance. It is known that viral replication in sub-optimal concentrations of ART will select for drug resistant mutants. Therefore, adherence to drug regimens is important, as are the drug bio-availability characteristics. However, there are many aspects of the evolution of HIV drug resistance that have not been fully explored.

The factors that contribute to the development of drug resistance are very complex. While we know that adherence is an important issue (Gross et al., 2006; Braithwaite et al., 2006; Bangsberg et al., 2006), we also need to understand the impact of specific degrees of adherence, as well as availability and economic affordability of drugs for marginalized populations, and whether drug classes are affected differently given that they have different bio-availability properties (Capetti & Rizzardini, 2019). Technologies such as therapeutic drug monitoring will soon be available, and data recorded in the OCS will help determine the relationship between adherence, drug concentrations, and the development of resistance. This information could be used to develop specific treatment strategies that will be less likely to give rise to ART drug resistance. One study by Harrigan et al. (2005) suggests that high baseline viral load may increase the likelihood of developing drug resistance, in spite of substantial (but imperfect) adherence. These findings need to be confirmed to elucidate the impact of drug class or HIV subtype on the development of drug resistance. Another important consideration is the difference between the genotype, which describes the viral potential to be drug resistant, and the phenotype or biological characteristic of being able to replicate in the presence of a specific drug. There are anecdotal reports that individuals with apparently genotypic resistant virus are able to continue to suppress their viral load and continue to be well. Harrigan et al. (2003) reported that modest levels of non-nucleoside

reverse transcriptase inhibitor (NNRTI) resistance do not affect viral load suppression. Although the factors that contribute to this phenomenon may be complex and are possibly related to viral fitness, the OCS is positioned to identify the frequency with which this occurs and to begin to explore the possibility of developing treatment strategies that could promote the selection of an "unfit" virus. Research conducted on the genotyping for non-B subtypes indicates that similar mutations are present (Kantor et al., 2005), but the phenotypic or clinical impact of the mutations has not been explored. Similarly, the clinical impact of HIV mutations in general, and drug resistance specifically has not been fully explored. Loutfy et al. (2004) reported that combinations of a subset of mutations related to protease inhibitor (PI) genotypic drug resistance were associated with a lack of viral suppression for patients on a lopinavir/ritonavir salvage regimen. A report by Recsky et al. (2004) noted that of those with HIV who had died in British Columbia (BC), relatively few had experienced multi-drug resistance (MDR), while a report by Hogg et al. (2006) found that resistance to NNRTIs was more associated with a greater risk of death, than resistance to PIs, and highlighted the need for further research in this area.

The HIV genotyping for Ontario has been and continues to be done by the BC Centre for Excellence in HIV/AIDS. HIV treatment policies and practices have varied somewhat between the two provinces, but are essentially similar. The data for all genotyping in both provinces is identical in format. Both the similarities and the differences make comparisons and collaborations between the two provinces very interesting and informative, and may provide information on which to base recommendations for improving treatment practice. For example, analyses of rare events and descriptions of emerging mutations will have more power, and it will be possible to determine outcomes related to drug resistance and morbidity for different treatment options and policies such as drug holidays for specific patient populations. The ultimate goal of is to provide evidence-based information on which to base treatment strategies that will minimize the development of drug resistance and/or effectively reduce the treatment failure associated with drug resistance.

Those who have been living with HIV treatment for a long period of time face even more difficult challenges. The incidence of complex chronic conditions and malignancies is increasing (Friis-Moller et al., 2003; Bica et al., 2001; Biggar, Kirby, Atkinson, McNeel, & Engels, 2004; Bozette, Ake, Tam, Chang, & Louis, 2003; Carr, 2003; Clifford et al., 2005; OAR Working Group on HIV and Aging, 2012), and it is difficult to know if this is a result of HIV infection, its treatment, or a natural aging process in the populations affected (Balslev et al., 1997; Bisson, Gross, Miller, Weller, & Walker, 2003; Perez, & Moore, 2003). Biomedical, social, and societal issues affecting PHAs, as well as risk behaviours, susceptibility to HIV, disease progression, and response to ART, change with aging (OAR Working Group on HIV and Aging, 2012). As effects of HIV on aging are best managed by focusing on preserving function rather than curing the disease (OAR Working Group on HIV and Aging), it is important to identify those affected to determine risk factors and potential screening tools, as well as prevention strategies for such complications.

In addition, despite viral suppression attributed to the introduction of ART, HIV-associated neurocognitive disorders continue to pose risks to PHAs. Although ART has significantly decreased the incidence of HIV-associated dementia, minor neurocognitive disorders and subclinical, asymptomatic neurocognitive impairments persist, even among those who are virally suppressed (Tavazzi et al., 2014; Simioni et al., 2010). It is important to understand the incidence of neurocognitive disorders among PHAs and to examine the current state of knowledge.

PRINCIPAL AIM IIA: TO EXAMINE HIV INFECTION AND ITS COMPLICATIONS

Objectives: (i) To examine the incidence and sequelae of opportunistic infections such as AIDS defining illnesses and among specific infections such as tuberculosis; (ii) To document immunodeficiency at presentation for treatment and currently; (iii) To investigate co-infections with short to medium term consequences such as sexually transmitted infections and the hepatitis viruses.

PRINCIPAL AIM IIB: TO EXAMINE HIV TREATMENT AND ITS COMPLICATIONS

Objectives: (i) To examine the use, effectiveness, adverse effects, and adherence to treatment for: anti-retroviral therapies and other drugs; alternative and complementary medicines; nutrition and micronutrients; and harm reduction and lifestyle; and (ii) To examine HIV treatment in pregnancy.

PRINCIPAL AIM IIC: TO UNDERSTAND FACTORS INVOLVED IN EVOLUTION OF HIV DRUG RESISTANCE

Objectives: (i) To examine the role of adherence in HIV drug resistance overall and by class of ART; (ii) To examine the impact of baseline viral load on the development of resistance; (iii) To examine the impact of social and demographic factors on the development of HIV drug resistance; (iv) To examine the development of phenotypic drug resistance by clade of HIV; (v) To compare the drug resistance patterns in British Columbia and Ontario; (vi) To compare the development of drug resistance in people who initiated ART in the pre-highly active antiretroviral therapy (HAART) era to those who initiated therapy in the post-HAART era; (vii) To identify new/emerging mutations that may confer resistance, paying particular attention to new therapies or combination therapies; and (viii) To examine the role of therapeutic drug monitoring and other emerging tests (i.e., pharmacogenomic testing) in predicting drug resistance.

PRINCIPAL AIM IID: TO UNDERSTAND THE CLINICAL IMPACT OF DRUG RESISTANCE

Objectives: (i) To compare clinical outcomes in those who acquired MDR at time of infection and those who developed MDR through exposure to ART; (ii) To compare clinical outcomes in those who acquired MDR after initiating therapy in the pre-HAART era to those who have developed MDR in the post-HAART era; (iii) To compare clinical outcomes in those with apparent drug resistant non-clade B strains to clade B strains; and (iv) To determine the clinical impacts of various levels/combinations of drug resistance.

PRINCIPAL AIM IIE: TO DETERMINE OPTIMAL MANAGEMENT AND CARE STRATEGIES IN THE FACE OF DRUG RESISTANT HIV

Objectives: (i) To assess the clinical benefit of baseline genotyping; (ii) To identify optimal treatment strategies for those with baseline drug resistance; (iii) To assess the clinical benefit of genotyping at treatment failure; and (iv) To identify optimal treatment strategies for specific complex circumstances including clade, treatment experience, and extent and level of drug resistance.

PRINCIPAL AIM IIF: TO EXAMINE CHRONIC, INFECTIOUS DISEASES AND CONDITIONS ASSOCIATED WITH HIV INFECTION

Objectives: (i) To determine the incidence, risk factors, screening and prevention for: liver disease; heart disease and diabetes; lung disease; renal disease; and neurological disease; (ii) To examine cancers in HIV, including opportunistic malignancies (Kaposi's sarcoma, lymphoma) and common or increased cancers in HIV (cervical, anal and gastrointestinal); (iii) To examine knowledge and attitudes regarding comorbidities and co-infections (such as human papillomavirus (HPV)), including prevention activities, such as vaccination and screening; (iv) To elucidate the interplay between HIV and aging and highlight research priorities to facilitate the transition to long-term care for long-term survivors of HIV; and (v) To highlight research priorities to understand the incidence of HIV-associated disorders and co-infections and to examine the current knowledge and programs and policies for prevention.

PRINCIPAL AIM III: HIV PREVENTION RESEARCH

Background and Significance: Following the advent of HAART, significant improvements have been made to the lives of individuals living with HIV. However, prevention efforts to reduce the number of incident cases of HIV have not yet shown the same success, and represent a top research priority. Canada is currently faced with an ongoing HIV epidemic, and although incidence has decreased in 2020, new infections and the migration of people living with HIV to Canada contribute to increasing prevalence of HIV in Canada (PHAC, 2022). In 2020, there was an estimated 1,520 new infections in Canada, with 507 occurring in Ontario (PHAC, 2022). Individuals in the MSM exposure category account 43.8 percent of the incident infections in 2020. It is critical that information about which factors contribute to these rising infection rates be obtained. This information, when combined with what is already known about risk behaviours among people living with HIV (PHAs), can be used to inform future HIV prevention programs and policies. Recent evidence has shown that among PHAs, unprotected sex continues to be a challenge for HIV prevention. Among MSM, unprotected anal intercourse (UAI) appears to occur more frequently among HIV-positive versus HIV-negative MSM. For example, in a study of HIV-positive MSM recruited in both 2005 and 2007, 37.6% of MSM had engaged in UAI with partners of unknown or serodiscordant HIV status, as opposed to 13.3% of HIV negative MSM (Hart et al., 2006). A similar phenomenon was observed in the Ontario Men's Survey, which found that 30% of HIV-positive men reported having UAI with a partner of unknown serostatus during the previous year, and 20% had UAI with a partner they assumed to be HIV-negative (Myers et al., 2004). Other research has shown that 70% of PHAs remain sexually active after receiving a positive HIV diagnosis (Crepaz & Marks, 2002), and that approximately one third of PHAs engage in sex without condoms (Kalichman, 2000). Behavioural prevention strategies to reduce the rate of unprotected sex and the rate of other risk behaviours among PHAs have included HIV status disclosure initiatives, the promotion of regular testing for sexually transmitted diseases (STDs), and harm and risk reduction programs (Coates et al., 2008).

Whereas the aforementioned behavioural interventions have typically focused on individual behavior, structural interventions are designed to target structural and social determinants of HIV vulnerability and HIV-related risk behaviors, and are considered a long-term development strategy (Merson et al., 2008). Ultimately, structural interventions are designed to change the political, social, economic, and environmental factors that determine HIV vulnerability (Gupta et al., 2008).

Because of the vastness and diversity of structural factors related to HIV, interventions encompass a range of programs, including social work services, mental health care, and housing programs (Temoshok & Wald, 2008).

Further research is needed to characterize the HIV epidemic in Ontario, so that prevention efforts will achieve optimal success. With the many intervention options available, particularly in the case of behavioural interventions, it is crucial that knowledge about patterns and rates of risk factors be identified. In order to develop an intervention based on patterns of risk behaviour, it is important to identify the demographic, psychological, and social factors related to risk taking, and to look beyond the characteristics of the individual as was done in the past. To help inform structural prevention efforts, information needs to be obtained about factors related to HIV exposure and the negotiation of safer sex practices. Knowledge about the broader socioeconomic and cultural context of a particular group or community can be also used to tailor behavioural and structural prevention efforts accordingly (Merson et al., 2008).

The more information is known about trends in risk practices and behaviours, the more effective future prevention efforts will be (Bertozzi et al., 2008). Knowledge about the demographic, psychological, and social factors related to risk behaviours, and how these factors are changing over time will be instrumental in determining how best to approach HIV prevention efforts in Ontario. Information about attitudes towards various HIV prevention options also needs to be obtained in order to determine which approaches are most acceptable and likely to achieve high rates of uptake.

In addition, not all individuals in Ontario are equally at risk of HIV infection. The OHTN recognizes five "key populations" in Ontario most affected by HIV: 1) women who face systemic risk; 2) African, Caribbean, and Black (ACB) communities; 3) gay, bisexual, and other men who have sex with men (GBMSM); 4) Indigenous communities; and 5) people who use drugs. Most PHAs in Ontario belong to one or more of these priority populations, and most new infections occur within these populations. A range of social drivers, as well as biological and behavioural factors, lead to increased risk within these populations. The OCS is the only cohort study of PHAs in Ontario, and represents an ideal opportunity to illuminate changing cultural and behavioural trends in HIV-related risk factors among PHAs. Another unique strength of the OCS is its potential to contribute knowledge to HIV prevention efforts among people who are already HIV-positive. The OCS also provides an opportunity to investigate behavioural risk factors, and the potential to explore adoption of biomedical interventions, should they become available in Ontario. Therefore, the OCS can contribute significant knowledge to HIV prevention efforts through the following:

- Identifying patterns and rates of risk behaviour
- Identifying demographic, psychological, and social factors related to risk behaviour
- Gaining an understanding of how these patterns, rates, and risk factors are changing over time
- Making comparisons between Ontario data in these areas and findings in the international research literature
- Informing community and policy makers on how to intervene effectively to reduce HIV transmission.

The OHTN makes every effort to change the HIV prevention, engagement, and care cascade, intervening at each stage of the cascade to ensure that PHAs in Ontario maintain and improve their health. Data collected from the OCS would enhance the understanding of the social determinants of health affecting priority populations and allow the OHTN to target resources to priority populations and adopt a systems approach by integrating HIV services with other health and social services that PHAs need the most. To meet and maintain the UNAIDS 90-90-90 targets, the OHTN aims to promote sexual health and prevent new infections; promote early diagnosis and timely care of HIV; improve the health, longevity, and quality of life for PHAs; and ensure the quality, consistency, and effectiveness of all provincially funded HIV programs and services.

PRINCIPAL AIM IIIA: TO UNDERSTAND THE DIFFERENTIAL IMPACT, PREVENTION NEEDS, AND CONTEXTS OF HIV AMONG PRIORITY POPULATIONS

Objectives: (i) To understand the needs of priority populations; (ii) To identify relevant research priorities and gaps in services; and (iii) To develop and evaluate prevention, treatment, and care services adapted to the needs of priority populations.

PRINCIPAL AIM IIIB: TO EXAMINE SOCIAL, PSYCHOLOGICAL, AND RELATED FACTORS IN HIV RISK TAKING

Objectives: (i) To identify factors relating to HIV exposure and the negotiation of safer practices such as: demographics, alcohol use, symptom distress, health-related quality of life, adherence, mental health, social support, stigma, stress, mastery and coping; (ii) To document changing cultural and behavioural trends over time in unprotected sex and needle-sharing among PHAs; and (iii) To examine factors related to risk practices with partners who are not clearly known to be HIV-positive.

PRINCIPAL AIM IIIC: TO EXAMINE THE UPTAKE AND EFFECTIVENESS OF BIO-TECHNOLOGIES AND THERAPEUTIC INTERVENTIONS IN PREVENTION

Objectives: (i) To examine perceptions and uptake of potential bio-technologies such as: vaccines, microbicides, or pre-exposure prophylaxis.

METHODS

Design

The OCS is a prospective, longitudinal, observational database. Patients are enrolled in the database on a voluntary basis.

SUBJECTS

Participants will continue to be recruited from hospital-based HIV clinics, hospital-based family practice units, community clinics, and primary care physicians in private practice throughout the province of Ontario. For participants who attend physician appointments via virtual visit (i.e., Telehealth Ontario) or who, for any other reason, are unable to attend in person for a questionnaire, the OCS baseline and yearly follow-ups will be administered through a secure, online connection

or by telephone. The OCS data collectors will ensure that participants are alone in a private location during the time of the interview. If they are utilizing a computerized medical record system, data will be extracted electronically in order to allow standardized electronic data collection and transfer to the OCS. Where CMS are not available, data will be collected through manual chart extraction and entered into an electronic local database and then extracted electronically to the OCS.

INCLUSION CRITERIA

Positive HIV antibody test or other serological tests indicative of HIV infection OR Laboratory evidence of HIV infection.

EXCLUSION CRITERIA

The following groups are enrolled in the HOOD, but no policies regarding their enrolment in the OCS have yet been elaborated: (i) Children under the age of 16; (ii) Adults not capable of giving informed consent; and (iii) See "Ethical Considerations - Special Cases of Consent."

DURATION

The OCS is a longitudinal observational database, which will have continuing Research Ethics Board (REB) approval for all participating sites. For REB purposes, the duration of the study is until 2010, but this date can be extended through REB approval. Upon completion of the study, all data will be stored for 7 years (a standard requirement), at which time all data will be permanently destroyed.

DATA

The OHTN will only collect, use, and disclose anonymized participant information for the purpose of scholarly research that contributes to an improved understanding of HIV; that contributes to improved treatment for PHAs; and/or that helps PHAs get better access to care. "Scholarly research" is defined as research that aims primarily at establishing facts, principles, or generalizable knowledge, which are of social value and intended to be publicly disseminated. Scholarly research must be consistent with established ethical standards and principles.

CLINICAL DATA EXTRACTED FROM MEDICAL CHARTS

Enrolment Information and Baseline Data – OCS

At enrolment, the current clinical profile relating to HIV infection will be collected. Clinical chart data will be abstracted and entered into a standardized database by the trained OCS data collectors. The data collected will include demographic information, information regarding HIV infection (date and location of diagnostic tests), other diagnoses (entered using ICD 9 or ICD 10 codes, laboratory testing data, and medication data. At enrolment, all participants are given a participant ID and unique encrypted identifiers (Pseudo-IDs or HASHs). Pseudo-IDs allow for linkage through time and to other data sources. The data will be reversibly encrypted/scrambled for secure data transfer at the time of enrolment, as well as regular transfer of data thereafter.

Ideally, retrospective clinical data will date back to the time of the patient's first positive serology, or, alternatively, when the physician from whom the data are collected first saw the HIV-positive individual. Using a retrospective approach at baseline will provide a more complete picture of the clinical history of the disease than would be possible with prospective data. In particular, it will ensure that data will be available about the clinical manifestations of early HIV infections. It is highly desirable that the past demographic, medical, and treatment history collected through the HOOD was carried forward (with patient consent) into the OCS, in order to maintain the value of the large cohort with longitudinal observational data which has been established.

Follow-up Data

Chart abstraction is carried out on a regular basis for sites, with the objective of 1-2 chart abstractions per patient per year. For sites using CMS systems, once a patient has been enrolled in the OCS, follow-up information will be transferred from the care site to the OCS by secure electronic transmission at regular intervals, at 1-2 times per year.. Follow up data will consist of the collection of visit information (date of last HIV visit), any new diagnosis, laboratory tests, or medication updates since the last chart abstraction or enrolment. For sites with electronic laboratory data, an extraction should occur 1-2 times per year. A comprehensive list of laboratory information is included in Appendix A.

COLLECTION OF SOCIODEMOGRAPHIC AND SOCIAL-BEHAVIOURAL DATA

Social and behavioural data will be collected from consented participants to augment the scope of data collected through clinical chart extraction. Participants will be requested to complete an interviewer administered questionnaire yearly. The questionnaire will be modular allowing the OCS the flexibility to ask different questions every year. After consenting to participate in the OCS, participants have the option of completing a short questionnaire which will take approximately 20 minutes to complete. Participants will then be able to complete the full baseline questionnaire within a year of their consent. Each year there may be additional sections which are added up to a time maximum of 120 minutes. Participant responses will be collected electronically using an online, electronic form linked to the encrypted unique identifier (Pseudo-ID) and reversibly encrypted/scrambled prior to secure data transfer.

Due to the personal nature of some of the questions, participants can refuse (without penalty) to answer questions. For the full baseline interview of 60-120 minutes, participants will be given $70.00. If they chose to complete the shorter version first, they will be given $20.00 for the shorter version (10-20 minutes) and the remaining $50.00 when they complete the remaining questions. This is meant to reimburse participants for out of pocket expenditures and their time. If participants are completing their questionnaire via a remote option (telephone, videoconferencing, Telemedicine), they will have the option of receiving their honorarium through: 1) picking up the cash at their next clinic visit, 2) accepting an e-transfer (bank transfer or Paypal), or 3) accepting a gift card of their choice (i.e. Loblaws, Amazon).

The interview will consist of two parts that use online electronic questionnaires.

For the first part, the research associate will ask questions and enter participant information into an electronic form.

For the second part, the participant will read and answer questions privately on the electronic form ("self-completed questionnaire"). Participants will be given verbal instructions on the use of the electronic form as well as a sheet of plain-language written instructions in order to complete these sections. Participants may choose not to answer any or all of the questions if they do not feel comfortable. At the end of the questions, the participant will "lock" their answers by following the instructions on the display screen. The interviewer will not be able to look at the answers. These answers can only be unlocked at the OHTN by a staff member who does not know each participant's identity.

Like the chart data, the information gathered on the electronic forms will be given the participant's unique identifier (Pseudo-ID) and reversibly encrypted/scrambled before it is sent to the OHTN.

Prior to the completion of the first year of follow-up, the request to withdraw from the questionnaire portion of the study necessitates a complete withdrawal from the study.

The sections of the questionnaire may include: Demographics, Immigration Status and Race; Employment, Income and Education; Housing, Incarceration and Food Insecurity; HIV Risk Factors; Clinical Indicators; ARV Therapy; Health Related Quality Of Life /Disability; Quality of Life and Symptom Distress; Co-Morbidities; Coronavirus (COVID-19); Monkeypox; Sense of Hope, Mental Health, Social Support, and HIV Stigma; Health Insurance Coverage; Health Behaviours; Cultural Resources, Health and Social Services; Patient Experience; Parenthood and Reproductive Health; Cannabis and Non-Medicinal Drug Use; Discrimination and Trauma; Intimate Partner Violence; Preventative Treatment; Relationships and Sexual Practice; Sexual Satisfaction; and Resilience.

Where possible, validated instruments were chosen for: alcohol use (AUDIT), symptom distress (ACTG), health related quality of life (SF-12), physical and mental disability (WHODAS 2.0-12), mental health (PHQ-9), social support (MOS-SSS), loneliness, (UCLA Loneliness Scale), religiosity (Religiosity Scale), spirituality (Spirituality Well-Being 12-item Scale (FACIT-SP-12), Indigenous spirituality (Spirituality 22-item Scale), cultural connectedness (Cultural Connected Scale(CCS-S)), stigma (HIV Stigma Scale), Adverse Childhood Experiences (ACE-10), , discrimination (Everyday Discrimination Scale), and resilience (Brief Resilience Coping Scale). Where unavailable, we used three mechanisms to develop additional questions: 1) use or modification of existing questions from national surveys, including the National Population Health Survey; 2) consultation with experts in the field; and 3) use or modification of questions currently being used in other HIV research studies, including the Canadian Cardiovascular Study.

The questionnaire has gone through informal testing (pretesting) to help identify poor question wording and ordering, and errors in questionnaire layout or instructions. Pilot testing will commence shortly at the OCS data collection sites to investigate problems with respondents' inability or unwillingness to answer the questions, possible additional response categories, interview length, etc.

The entire questionnaire is appended to the protocol; however, as previously explained, only certain sections or instruments will be chosen in any given year for administration.

ALCOHOL USE

Alcohol Use Disorders Identification Test (AUDIT)

The Alcohol Use Disorders Identification Test (AUDIT) was developed by the World Health Organization to identify people whose alcohol consumption is harmful to their health (Allen, Litten, Fertig, & Babor, 1997; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993; Saunders, Aasland, Amundsen, & Grant, 1993). The test consists of 10 items. Three items assess the frequency and amount of drinking; three items assess the issue of alcohol dependence; and four items address problems caused by alcohol. The test takes about 2 minutes. Test norms are available for heavy drinkers and alcoholics. Studies have shown that the AUDIT has adequate test-retest reliability (Allen, Litten, Fertig, & Babor, 1997). In addition, studies have also demonstrated that the AUDIT has adequate content, criterion, and construct validity (Reference). The AUDIT has been used in HIV populations (Chandiwana et al.,1999; Wagner et al., 2001).

SYMPTOM DISTRESS

AIDS Clinical Trials Group (ACTG) Symptom Distress Questionnaire

The AIDS Clinical Trials Group (ACTG) Symptom Distress Questionnaire is a 20-item measure which collects information on the presence of symptoms and a measure of the level of bother of the symptom. The completion takes less than 5 minutes. Validation of the instrument has shown it to be both comprehensive and comprehensible to HIV-positive individuals (Justice et al., 2001). The measure has been shown to have good construct validity (Justice et al., 2001).

HEALTH RELATED QUALITY OF LIFE:

SF-12 Health Survey (SF-12)

The 12-Item Short Form Health Survey (SF-12) is a 12-item survey containing a subset of the questions used in the 36-Item Short Form Health Survey (SF-36). Subscales include physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health. It can also be scored to yield two summary scores for physical and mental health. Scores range from 0 to 100 with higher scores reflecting higher health-related quality of life within the domain (Ware, Kosinski, & Keller, 1996). The SF-12 has been used in populations with HIV (Delate & Coons, 2000; Han, Pulling, Telke, Huppler et al., 2002). It has been successfully cross-validated with other instruments used to collect quality of life data (Ware, Kosinski, & Keller, 1996).

DISABILITY

World Health Organization Disability Assessment Schedule (WHODAS 2.0)

The World Health Organization Disability Assessment Schedule (WHODAS 2.0) is a generic assessment instrument for health and disability that generates standardized measures of disability levels and profiles. This tool was developed as a collaborative international approach, and it is applicable across cultures in all adult populations and can be used across all diseases, including

mental, neurological, and addictive disorders. This short 12-item tool assesses six domains of functioning, including cognition, mobility, self-care (hygiene, dressing, eating, and staying alone), getting along (interaction with people), life activities (domestic responsibilities, leisure, work and school), and participation in community activities. It has been validated in various populations (Carlozzi et al., 2015; Moen et al., 2017).

MENTAL HEALTH

Patient Health Questionnaire (PHQ-9) (9-items)

The Patient Health Questionnaire (PHQ-9) is a 9-item self-reported widely used screening instrument for depression during the past two weeks. The nine items of this instrument are based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) for depression. The instrument uses a 4-point scale with a total score ranging from 0 to 30 and per item score ranging from 0 to 3. A cut-off point of 10 is used to identify major depression with a sensitivity of 0.88 and a specificity of 0.88 (Kroenke et al., 2001). The validity and reliability of this instrument has been well-established in the general population and patients in primary care (Spitzer et al., 1999; Kroenke et al., 2001; Lowe et al., 2004). The administration time for this instrument is approximately 5 minutes.

SOCIAL SUPPORT

MOS Social Support Survey (MOS-SSS) (12-items)

The MOS Social Support Survey (MOS-SSS) is a 12-item measure of perceived availability of social support. The scale measures emotional/informational support, tangible support, positive social interaction, and affectionate support. The measure has been shown to have good reliability and validity (Sherbourne & Steward, 1991) and has been used in HIV populations (Burgoyne & Saunders, 2000; van Servellen & Lombardi, 2005).

STIGMA

HIV Stigma Scale (12-items)

The HIV Stigma Scale (Berger, Ferrans & Lashley, 2001) was developed based on the existing literature on stigma and the psychosocial impact of having HIV. The short form (Reinius et al., 2017) consists of 12 items exploring 4 factors of stigma: personalized stigma, disclosure concerns, negative self-image, and concern with public attitudes about PHAs. Construct validity of the HIV Stigma Scale has been assessed (Nunnally & Bernstein, 1994) as well as internal consistency reliability and temporal stability (Berger et al, 2001).

ADVERSE CHILDHOOD EXPERIENCES

The Adverse Childhood Experiences Scale (ACE-10 (10-items)

The Adverse Childhood Experiences Scale (ACE-10) is a screening tool for adverse experiences that occurred during childhood (i.e., first 18 years of life) (Felitti, 1998). It consists of 10 items assessing experiences of abuse (psychological abuse, physical abuse, sexual abuse, emotional neglect, physical neglect) as well as family dysfunctions (violent treatment of mother or stepmother, substance misuse in the household, parental separation or divorce, household mental illness, and incarceration of a household member). It has been widely used in the general population as well as among PHAs (Campbell et al, 2016; Whetten et al, 2006; Welles et al, 2009).

CULTURAL CONNECTEDNESS

Cultural Connectedness Scale (10-item) Short Version (CCS-S)

The Cultural Connectedness Scale is developed by Snowshoe (2015) to assess the relationship between the cultural connectedness and mental health issues and well-being among First Nation communities across Canada. By acknowledging cultural connectedness as an important factor for promoting the wellbeing and mental health of First Nations people, particularly youth, the CCS-S is used to examine the associations between individuals' cultural connectedness and their "self-efficacy, sense of self (present and future), school connectedness, and life satisfaction and, in some cases, predicted mental health above and beyond other established social determinants of health" (Snowshoe, 2015, p. iii). The CCS-S has since been used to assess physical, social, and mental health among Indigenous peoples (e.g., Gray & Cote, 2019; Russell, 2018).

MENTAL HEALTH, SOCIAL SUPPORT, AND HIV STIGMA

Brief Resilience Coping Scale

The Brief Resilient Coping Scale (BRCS) is a 4-item measure designed to capture tendencies to cope with stress in a highly adaptive manner (Sinclair & Wallston, 2004). The scale focuses on the tendency to effectively use coping strategies in flexible, committed ways to actively solve problems despite stressful circumstances.

SLEEP QUALITY

Sleep Quality Scale (SQS) and Sleep Apnea Assessment Scale (STOP)

This section is introduced to assess the participants' quality of sleep, in other words to get a sense of whether the sleep that they are getting is restful and restorative. Here include two scales: (1) Sleep Quality Scale (SQS); and Sleep Apnea Assessment Scale (STOP scale).

The SQS is a four-point, Likert-type scale, developed by Yi and colleagues (2006). "Consisting of 28 items and evaluates six domains of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty waking, and sleep satisfaction" (Yi et al., 2006, p. 345).

Sleep Apnea Assessment Scale (STOP scale) is developed by Chung and colleagues (2008) to assess obstructive sleep apnea in surgical patients. The STOP is a self-administered screening tool that includes four yes/no questions about a person's snoring habits during sleep, tiredness during daytime, breathing routine during sleep, and blood pressure.

VACCINES

The Vaccine confidence scale (5C scale)

The 5C scale (Betsch et al, 2018) is a scale consisting 15 items and assess the role of complacency (not perceiving diseases as high risk), constraints (structural and psychological barriers), calculation (engagement in extensive information searching), and aspects pertaining to collective responsibility (willingness to protect others) in explaining vaccination uptake behavior.

Doxy PrEP and PEP

This section explores participants' experiences with using doxycycline ("Doxy") for prevention. "Doxy for prevention" refers to taking doxycycline (an antibiotic) to reduce the risk of certain bacterial sexually transmitted infections (STIs), including syphilis, chlamydia, and gonorrhea. Through fifteen new questions, this section asks about participants' knowledge of Doxy, frequency of use, source of medication, prescription and consultation experiences, and overall satisfaction with using it.

Transition Readiness Assessment Questionnaire (TRAQ)

This section is introduced to assess the experiences of participants transitioning from youth to adult care. It includes questions about managing medications, keeping appointments, tracking health issues, relationships with providers and the importance of being able to manage one's own health care.

Everyday Identity Stress scale

This scale assesses participants' lifetime experiences of stress related to any aspect of their identity, such as gender, race, ethnicity, sexual orientation, social class, religion, nationality, body size, or other identity-related factors.

Traditional Masculinity-Femininity (TMF) scale

This section is introduced to explore participants' understanding of their sense of selves in relation to traditional masculinity and femininity. These questions address different aspects of self-concept, including how one perceives themselves, how one would ideally like to be, and how their interests, attitudes, behaviors, and appearance may be traditionally viewed.

DATA QUALITY CONSIDERATIONS

Reliability and Completeness of the Data and Timeliness of Follow-Up

The computerized medical record is currently in use in several sites in Ontario. Its acceptability for medical care has been established. We are presently undergoing analysis to ensure usable data for research purposes. The OHTN will support an ongoing process of user training and support, both to ensure successful clinical use and hence support high quality care, and to seek to ensure the best possible research data. It is an explicit policy of the OHTN that medical care is of primary importance and must not be compromised by the process of producing and collecting research data.

REPRESENTATIVENESS OF THE DATA

In the past, HOOD has endeavoured to measure the representativeness of its data by comparing numbers, proportions, and demographic characteristics of enrolees with existing data on the province's HIV-positive population from the Ontario Ministry of Health's HIV Laboratory testing database. Having a measure of the representativeness of the HOOD data in relation to the existing data allows some conclusions about the generalizability of the HOOD data. This process will continue for the OCS, but in addition, each care site can be asked to compare these characteristics for its group of enrolled patients versus its overall population under care. For those sites using a CMS, this will be a relatively easy process; however, it may remain difficult for sites using manual medical chart extraction. It should be emphasized that only summary numbers of the persons not under care; no individual data or cell sizes with numbers including less than 5 individuals would be obtained.

DATA DUPLICATION

An encryption process has been developed that will allow for the generation of encrypted unique identifiers (Pseudo-IDs) for each individual enrolled. As well, information can be collected regarding visits the individual patient makes to other physicians who provide data to the OCS, and their encryption system will generate the same encrypted unique identifier (Pseudo-ID) so that the OCS can match records to the same individual's records on an ongoing basis without obtaining any direct identifiers at the data collection end. The same method will be used to create an encrypted unique identifier (Pseudo-ID) for those sites not using a CMS.

DATA FORMAT AND CONFIGURATION

The OCS has a high level of technical, physical, and administrative security measures to ensure data integrity, privacy, and confidentiality.

Data collection is limited to only those variables necessary to achieve the principal aims and objectives of the OCS. In addition to the creation and use of the encrypted unique identifiers (Pseudo-IDs) and reversible encryption/scrambling for secure transfer described above, all direct identifiers are removed from the data, indirect/quasi-identifiers are manipulated, and other privacy and security controls are applied, to minimize any risk of re-identification and maintain the anonymity of OCS participants.

The OHTN offices have keys required for after hours' access, which is monitored by a security firm responsible for building security, as well as additional locking systems for the computers receiving data downloads and those that store the research data itself. These two are separate, and

there is a firewall system in place to prevent any access to data from outside the OHTN. Only specifically authorized staff at the OHTN are allowed access to the research data. Staff accessing the data are also required to sign confidentiality agreements, to mitigate any risk of re-identification (e.g., in case they should inadvertently surmise an identity through some combination of demographic and geographic variables), by requiring that all such data be kept strictly confidential.

LINKS WITH OTHER OBSERVATIONAL DATABASES

In order to maximize the power of the databases, the OHTN will seek to link its database with other data sources, such as CIHI, Public Health Ontario (PHO) of the Ontario Ministry of Health, AIDS surveillance, vital statistics, and ICES. To accomplish this, several linking variables will be used at the site of the originating data to create a unique encrypted identifier that cannot be decoded to determine the original identifiers. These identifying variables will include date of birth, Health Card Number, social insurance number, and Soundex (a modified version of the name which allows matching but is not unique). Several pseudo identifiers are needed in order to allow matching between the computerized medical record (the core data) and other databases, each of which has different linkage variables available (for example, CIHI has health card number and date of birth; death records have social insurance number and name; many social service databases have social insurance number but not health card number, etc.). Through this method, the OCS will not receive any direct identifiers, including health card number or social insurance number; these will remain in the data source from which they originated, with only the irreversibly encrypted unique identifier (Pseudo-ID) being transmitted. A number of additional steps have been taken to ensure patient confidentiality and data security (see above).

At present, the province of Ontario has a number of sources of information regarding the health of PHAs: CIHI data, HIV serology data, Ministry of Health funded drug programs, AIDS Case Reporting, and Death Certificate Review. The HOOD has successfully gained access to some of these sources of information in the past (CIHI, death certificates, Ontario Drug Distribution Monitoring Database (ODDMP), Provincial Laboratory Database). These potential sources are described briefly below.

Canadian Institute for Health Information (CIHI) Data

During each hospital admission, a record of standard information is compiled and submitted by the hospital to CIHI. This record includes diagnostic information and some information on the care provided during the admission. Each hospital in Ontario submits records to CIHI for each hospital admission. This data set allows analysis of clinical diagnostic information and health service utilization on PHAs.

HIV Serology and Other Data from the Public Health Ontario (PHO) Laboratory

The Public Health Ontario Laboratory compiles data on serological and bacteriological tests (e.g., HIV genotyping, HIV viral load, HIV antibody test results, bacterial culture and sensitivity, hepatitis C, syphilis screen, tuberculosis, toxoplasmosis) conducted in the province. For many of these tests, the PHO lab is the sole provider within the province.

Ontario Ministry of Health Funded Drug Programs (HIV Project Centre)

When a patient is enrolled in one of the Ministry of Health drug programs, information is collected on current CD4 count, CDC disease classification, age, and gender. CD4 count and disease classification have also been collected on a follow-up basis at three-month intervals since May 1992 to facilitate accurate drug requirement projections. As new antiretrovirals have become available, they have been distributed through other programs, and data received by the ODDMP may be much less complete for these drugs.

AIDS Case Reporting/Death Certificate Review (Public Health Branch and Registrar General)

The Public Health Branch of the Ontario Ministry of Health collects information on both AIDS cases and AIDS-related causes of death. AIDS has been a reportable communicable disease in Ontario since 1983. Physicians are required by law to report AIDS cases and HIV infection to their local Medical Officer of Health. Reports of HIV infection by physicians are notoriously incomplete at the local level. In addition, information on HIV infection that is reported to the local Medical Officer of Health is not transmitted to the Public Health Branch in Ontario. Information is also gathered from death certificates that list AIDS-related disease as a cause of death. Since delays in reporting from treating physicians are not uncommon, many AIDS cases are identified after death through AIDS death certificate reviews. These data can provide a potentially valuable source of information on advanced and end stages of HIV infection.

Institute for Clinical Evaluative Sciences (ICES)

The ICES is an independent non-profit organization that houses data as well as undertakes research on a wide variety of health care issues. Administrative data housed by ICES includes hospitalizations, data from continuing care and ambulatory care centres, drug benefit programs (ODB), and physician claims (OHIP).

COHORT STUDIES

A number of large cohorts of PHAs have been followed in Canada and the United States. These cohort studies have tracked large groups of clinical cohorts, homosexual and bisexual men, PWIDs, and women and their babies in order to collect detailed information on incidence, risk factors, clinical gestations, and prognostic indicators of the disease. Global collaborations between observational databases are a promising mechanism of combining data to achieve large sample sizes and answer relevant clinical questions expeditiously.

Physicians' Billing Data (OHIP)

Ontario physicians provide diagnostic information on PHAs in each bill for services that they submit to OHIP.

Details of External Linkages

When linking to an external data source, the OHTN will provide an encrypted file containing the OCS participant unique encrypted identifiers (Pseudo-IDs) along with a system generated

identifier for that study. This will be utilized by a "black box" program which has the capacity to decrypt the file directly into memory for the execution of the program – and be purged from memory on completion of the program.

In order for the encryption process developed by the OHTN to selectively link data pertaining to the OCS participants using the unique encrypted identifiers (Pseudo-IDs), the OHTN must run its "black box" over the entire external linkage dataset. This necessary step in the process assigns unique encrypted identifiers (Pseudo-IDs) to all individuals with data in the external database of interest, so that the external data for those individuals with unique encrypted identifiers (Pseudo-IDs) that match those of the OCS participants (stored in memory) can then be selectively extracted for inclusion and linkage in the OCS database.

This means that identifying information pertaining to all individuals with data in the external database is made available to the OHTN "black box" as a necessary step in the data encryption and extraction process. Significantly, this identifying information pertaining to non-OCS participants is not made available or otherwise disclosed to any OHTN staff member, consultant or service provider during this process, nor is it retained by the OHTN's "black box". It is purged from the OHTN "black box" when the program completes. Only the unique encrypted identifiers (Pseudo-IDs) assigned to the OCS participants, and copies of their associated data, as maintained within the external linkage database, remain at the end of this process for linkage with data.

Once the linkage process is complete the "black box" program is deleted.

TRANSFER OF DATA FROM HOOD TO OCS

When HOOD participants who consented to be part of the OCS, their personal identifiers were used to establish an irreversible pseudo identifier that became their unique identifier in the OCS. A one-way non-reversible computer algorithm is used to create an encrypted key or pseudo identifier using the participant's Health Insurance Number, Social Insurance Number and Name and Date of Birth. Only the pseudo identifier was transferred with the health information to OCS. It is not possible to determine personal information from the pseudo identifier, and no personal identifiers are ever transferred to the OCS.

Participant Consents to Participate in the OCS

HOOD participants who consented to participate in the OCS had their data migrated into the new database platform, as outlined above. For these participants consenting to participate in the OCS, data will be collected regularly either through a CMS or by manual data extraction into an electronic database.

Participants Who Decline Participation in the OCS but Agree to Archival of the HOOD Data

HOOD participants who declined participation in the OCS but explicitly consent to archival of their HOOD data had their data migrated into the OCS, as outlined above but will have no further data collected or forwarded to the OCS.

Participants Who Decline Participation in the OCS and Decline Archival of the HOOD Data

HOOD participants who declined participation in the OCS and who asked that their data not be migrated into the new platform did not have their data merged into the OCS. Their data was permanently deleted from the HOOD dataset, as specified in the original HOOD Information for Participants.

Participants Who Are Lost to Follow-Up and Subsequently Request Withdrawal of Information

In previous conversations with the University of Toronto REB, who consulted with Professor Bernard Dickens, the following was suggested:

"For those patients who are deceased, Bernard feels you can assume that their earlier consent is still valid and use their data. For patients who have dropped out of the study, conscientious attempts should be made to reach them. If this proves impossible, then you can also assume consent and use their data. He recommends that the community be provided with written information (in both paper and electronic form) concerning the status of the database and the value of the study. The notices should also provide a description of the confidentiality procedures which are in place."

Some HOOD participants may have left the practice of the physician who enrolled them in the database or be otherwise lost to follow-up. The OHTN will attempt to contact these individuals through advertisements (see Appendix) as well as through announcements on the Internet and through community agencies. The OCS information brochures will be made widely available. To avoid having participants contact the OHTN directly, and jeopardize the anonymity of the HOOD database, an independent third-party agency will collect participants' names and communicate with the enrolling physician's office. The enrolling physician will send the participant's HOOD identifier to the OHTN, who will then ensure that none of the participant's information is transferred to the OCS. Copies of forms to be faxed from the third party to the physician, from the physician to the OHTN, and from the third party to the OHTN are appended. The process is summarized below:

A HOOD participant who is no longer with their enrolling physician, and who does not want to communicate further with that physician, and wishes to ensure that their HOOD data do not become part of the OCS will contact the third party.

The third party sends the name of the participant to the enrolling physician and assigns a unique Request Number.

The third party sends 2 forms to the physician by fax (HOOD Withdrawal Forms #1 and #2). The first form informs the physician of the participant's name. The second form is for the physician to return to the OHTN and contains only the HOOD identifier and no names or other personally identifying information.

The third party faxes a notification to the OHTN to expect a fax from the enrolling physician (HOOD Withdrawal Form #3). The OHTN will contact the physician until they receive an adequate response.

The OHTN will send a confirmation to the third party when the withdrawal request is successful, or if no record of the individual can be found in the physician's practice.

The third party will notify the participant of the outcome of the withdrawal request.

The OHTN is currently negotiating with the Ontario AIDS Network to fulfill the role specified above. No transfer of the HOOD data for participants who are lost to follow-up will occur until an appropriate third party agency has been contracted.

Participants Who Are Permanently Lost to Follow-Up or Deceased

For participants who were permanently lost to follow-up or deceased, the OHTN assumed that their earlier consent is still valid and migrated their data into the OCS.

Future of the HOOD Project

The OCS fully incorporated existing HOOD sites. The HOOD participants were re-consented and invited to join the OCS. New enrolees will also be invited depending on the specific requirements to ensure a vigorous and representative sample of the Ontario HIV epidemic. As sites adopt a CMS, they will be interfaced to the OCS and the mechanism for data collection will change, but there will be no need for another consent at that time. New sites have been added to improve representativeness of the study.

COLLABORATION

As mentioned in the objectives above, the OHTN will seek to encourage and facilitate the goals of other organizations and research initiatives, but not supplant them. Therefore, collaborative work with community-based organizations and researchers will seek to maximize the use of the OCS to answer questions of concern raised within the community.

The OCS will facilitate connection to sub-studies involving PHAs. Participants will be asked if they would like to participate in a sub-study through the OCS questionnaire and permission for connection will be documented in the questionnaire. Any future sub-studies that are linked to the OCS questionnaire will follow the OHTN research approval process set out in the Research Policies document and will require approval or exemption from any and all site-specific REBs. The OCS data collectors will facilitate the handover between the OCS participants who agree to participate in a sub-study and the sub-study research staff for consenting, intervention, and follow-up.

DISSEMINATION OF RESEARCH FINDINGS

It is expected that the majority of the research studies conducted using data from the OHTN's databases will be published in the peer-reviewed literature. However, the OHTN will also provide regular updates to subscribers. The OCS Governance Committee will determine the content and

frequency of these updates. The OCS includes reporting features which will allow summary data to be generated for stakeholders and published on the OHTN website, for example, as well as to be used for administrative purposes such as defining current enrolment numbers and losses due to death or withdrawal.

Limitations

The OCS design has several potential limitations.

As with most other databases, the OCS will continue to collect a standardized set of data. This limits the usefulness of the OCS data to certain types of research questions. However, linking with other available data sources greatly expands the scope of feasible research questions.

Because the data in the OCS will continue to be collected from a number of sites, the OCS will depend for its ongoing data on the quality of data entered by providers into the computerized medical records or by data collectors into an electronic chart extraction database. These challenges invariably affect the quality of the raw data to some extent, and therefore also the validity of the data.

The data collected for the OCS, like the data for any observational database, are likely to be subject to a variety of biases. First, because of the voluntary nature of the database, there will be a selection or volunteer bias. That is, those patients who volunteer may have certain characteristics that are different from patients who do not volunteer to participate.

Other sources of bias that are common in database research result from the inability to exercise stringent control over, or perform adequate measurement of, disease severity, coexistent disease, baseline functional status, and many sociodemographic factors.

Future recruitment of participants will be dependent, to some extent, on the success of the publicity campaign about the OCS and the degree of cooperation of the care sites in approaching potential participants about enrolment. Less common and emerging risk groups may be more difficult to reach systematically with publicity materials and may be the most difficult to recruit. This may result in these groups being underrepresented in the sample. Mechanisms and strategies to encourage participation and enrolment in the database will be developed in an attempt to reduce these biases.

Since enrolment can occur at any time following an HIV positive serology test, there will likely be a spectrum bias in the sample. That is, there will likely be an over-representation of persons with more advanced disease. As well, the OCS will not always be able to provide accurate information on the disease status of the affected person at the time of his/her first positive serology. However, this may be estimated if the approximate date of the serology and the current disease status are known.

Despite these limitations, the OCS is expected to continue to make a valuable contribution to the state of knowledge about HIV in Ontario. The principal strengths of the database are expected to lie in the areas of documenting resource utilization, treatment outcomes, and trends in practice patterns.

Ethical Considerations

Recruitment

Enrolment in the OCS observational database will be open to all persons who meet the inclusion criteria described above. In order to adequately account for the full spectrum of HIV-related disease, it will be important to reach individuals at all stages of HIV infection, from seroconversion to AIDS. Publicity will be aimed at both physicians and community members to encourage their participation in the database. Strategies to encourage participation will be developed, taking into consideration the extremely sensitive nature of the context and the specific needs and concerns of patient groups and physicians.

DISCLOSURE/PATIENT INFORMATION

Patients who are invited by their physicians to participate in the OCS will be given a detailed description of the project. Particular emphasis will be given to the patients' role in the research, including their time commitment and the actual procedures that participation will entail. As well, patients will be informed of the potential harms that they could incur as a result of their participation, and that they are not likely to derive any personal medical benefit from their participation. It will be made clear to patients that declining to enrol in the database will not, in any way, jeopardize the care that they receive from their physician. It will also be made clear to patients that they may withdraw their consent at any time and that if they decline further participation, no further data will be collected but their existing data will remain in the database for purposes of confirming previously completed analyses. No new analyses will be undertaken with their data. They will be informed that it will not be possible for any and all information that had already been collected about them to be removed from the database.

Finally, patients will be informed of the steps that have been taken to minimize any risks associated with participation. Patients will be given access to a phone number that will allow them to contact the OHTN with questions related to the OCS.

A key aspect of the information given to prospective participants in the OCS is the explanation of the process and purpose of Pseudo-ID generation for linkage and the procedures in place to ensure that any information collected about them will be held in the strictest confidence. Linkage will also allow the OHTN to document patterns in utilization of services by PHAs by identifying trends in movement between primary care physicians and specialists, and between and among different geographic regions. The importance of this information will be explained to prospective participants.

CONSENT

The OCS is a voluntary enrolment database. As such, patients must formally consent to participate. Patients will have the option of enrolling in the database or declining to enrol in the database. A guide for investigators obtaining consent is being developed.

After having read the patient information material, and having had any questions answered to their satisfaction, those patients who are still interested in participating will be provided a consent form

to read, sign and keep, along with the information about the OCS, so that he/she may refer to it at any time. Participants can be given the option to sign with a "wet signature" or electronically using a secure e-signature process. For participants opting for an e-signature, the consent form will be sent to using an e-signature platform. The platform login is unique to the site and available only to the data collector. Consent forms will be emailed through the platform and the document cannot be opened without a unique code. The code will be given to the participant verbally. After a participant has signed, the data collector will receive an email and the data collector can then sign the form. After all parties have signed, the participant will receive an email from the e-signature platform with a link to the final signed copy, accessible by using the unique code previously provided. Data collectors will print the final e-signed copy and store with the wet signature consents. All signed consent forms will be kept in the physician's records.

Participants who enrol in the OCS will have a fourteen (14) day period from the time of enrolling until the first data is sent to the OCS. During this period, they may withdraw their consent with the knowledge that none of their data has been transferred. Following this period, individuals are free to withdraw their ongoing participation at any time by signing and dating a Withdrawal of Consent form (appended). Data transfer will cease within two business days of receipt of the withdrawal of consent. In alignment with data rights, participants also have the option of withdrawing all of their previously collected data from the OCS database.

The OCS information form has been amended to reflect the changes to the HOOD project and to inform participants of the OCS. The OCS consent form has a special section for the HOOD participants.

SPECIAL CASES OF CONSENT

The HOOD enrolled children and adults with diminished capacity according to its original protocol. The OHTN did not develop policies regarding enrolment of individuals from these populations and it does not anticipate doing so in future.No more children or adults of diminished capacity will be enrolled in the OCS. Participants previously enrolled will continue to be followed.

CONFIDENTIALITY AND SECURITY OF DATA

Those patients who decide to participate in the OCS will be informed that their personal information will be anonymized and kept in the strictest confidence.

Only the enrolling physicians and clinical staff under their supervision will have access to the patients' charts for the purpose of requesting patient participation in any additional research studies. Linkage with other databases will be strictly confidential and produce anonymized data.

Key Participants

HIV Patients and Community

All eligible HIV-positive patients in offices of physicians providing HIV care in Ontario and using a CMS, as well as existing HOOD sites will be invited to participate in the OCS. Once an individual

is enrolled, and with his/her on-going consent, information will be collected through the entire course of his/her disease. Accrual of participants will be continuous.

Through its ongoing communication strategy, the OHTN will seek to inform both health care providers and HIV community members about the plans for the OCS and ongoing database research in Ontario, in order to promote understanding and participation.

It is important for the representativeness of the OCS data that patients newly diagnosed with HIV are encouraged to enrol in the database. The support of community groups will be sought in determining the most appropriate means of inviting these individuals to participate. This is an extremely important but ethically sensitive issue. It would be extremely valuable to determine the reasons why some individuals may not want to participate in the database and attempt to address these issues.

Participants will be provided with a telephone number that will allow them to receive more information about the OCS, or the OHTN, and to clarify issues that may arise throughout their involvement with the OCS.

PHYSICIANS

All physicians who treat HIV-positive patients and use a supported CMS will be encouraged to invite their patients to participate in the OCS, including physicians from existing HOOD sites.

RESEARCHERS

The OCS is a research resource aimed at providing researchers with a high-quality source of data about HIV. Researchers will be granted access to OCS data based on successful applications of research proposals. All researchers will be required by agreement to maintain the anonymity of the OCS participants; not to identify (or seek to identify) any OCS participant, or to link, otherwise use or disclose OCS data in a way that would be reasonably foreseeable in the circumstances to identify any OCS participant. It is hoped that the OCS will generate interest not only among epidemiologists and clinical scientists, but also among investigators from a variety of HIV-related fields including health services research and behavioural sciences research, and community-based research, such as the investigation of complementary therapies.

PARTICIPANT FEEDBACK

All participants in the OCS will receive regular updates on the OCS activities in forms such as a newsletter, bulletins about specific issues and events, and/or some form of clinical data report (these will be made available through clinical care sites, AIDS Service Organizations, and via the OHTN website). A participant feedback survey has been added to the OCS website and will be available for all participants to rate their experience with the questionnaire itself, as well as provide suggestions for the inclusion of future questions or modules.

OTHER STAKEHOLDERS

The OCS is also a potentially valuable resource for: Epidemiologists; Public health workers; Health economists; Government agencies; Community groups and organizations providing services to the HIV community; Pharmaceutical industry.

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APPENDIX A

Laboratory Information

The following laboratory information should be collected through chart abstraction or transmission of electronic laboratory records.

Hematology and Chemistry Tests	Infectious disease Tests	Immunological Tests
White Blood Count	Chlamydia Trachomatis-Culture	CD4 Absolute
Absolute Neutrophils	Chlamydia Trachomatis-NAAT-Gen Probe	CD4 Percent
Red Blood Count	Chlamydia Trachomatis-NAAT-PCR	CD8 Absolute
Hemoglobin	Chlamydia Trachomatis-NAAT-Others	CD8 Percent
Lymphocyte Count	Chlamydia Trachomatis-Others	CD4/CD8 Ratio
Neutrophil Lymphocyte Ratio	COVID-19 Rapid Antigen Test	CD3 Absolute
Platelet Count	COVID-19 PCR Test	CD3 Percent
Glucose Random	Crypto Ag	
Glucose Fasting	CMV PCR	
Glycated hemoglobin (A1C) test	CMV Ab-IGG	
Albumin	CMV Ab (Urine)	
Creatinine	CMV Ab-IGM	

Albumin-Urine
Creatinine-Urine
Albumin Creatinine Ratio (ACR)-Urine
Estimated glomerular filtration rate (eGFR)
Glomerular Filtration Rate
Phosphate
Cholesterol Total
Cholesterol Total Fasting
Cholesterol Total Random
Cholesterol HDL
Cholesterol HDL Random
Cholesterol HDL Fasting
Non-HDL Cholesterol Random
Non-HDL Cholesterol Fasting
Cholesterol Triglycerides
Cholesterol Triglycerides Fasting
Cholesterol Triglycerides Random
Cholesterol LDL
Cholesterol LDL Fasting
Cholesterol LDL Random
Cholesterol HDL Ratio Fasting
Cholesterol HDL Ratio Random
Cardiac Troponin T
Cardiac Troponin I
Troponin T, High Sensitivity
C-reactive protein
High-sensitivity C-reactive protein
Creatinine Phosphokinase (CPK/CK)
Creatinine Phosphokinase-MB (CK-MB)
Bilirubin
Total Bilirubin
Bilirubin Indirect
Bilirubin Direct
Alkaline phosphatase (ALP)
ALT (SGPT)
AST (SGOT)
Prothrombin Time (PT)
Partial Thromboplastin Time (APTT)
Prothrombin INR (INR)
Beta 2 Microglobulin
Lactate Dehydrogenase (LD)

CMV Ab-IGG, IGM
N. gonorrhea-NAAT-Others
N. gonorrhea-Others
N. gonorrhea-NAAT-PCR
N. gonorrhea-Gram stain
N. gonorrhea-NAAT-Gen Probe
N. gonorrhea-Culture
Hep A Total Ab (IGG+IGM)
Hep A Ab-IGM
Hep A Ab-IGG
Hep B Core Ag
Hep B e-Ab
Hep B Core Ab (IGG+IGM)
Hep B Core Ab-IGM
Hep B Surface Ab
Hep B Surface Ag
Hep B e-Ag
Hep B Core Ab-IGG
Hep C Ab / Anti-HCV
Human Papillomavirus Virus (HPV)
Syphilis-IGG/IGM-CMIA (Screen)
Syphilis-RPR (Confirmed)
Syphilis-FTA-ABS (Confirmed)
Syphilis-TPPA (Confirmed)
Syphilis-Unknown / (Confirmed)
Syphilis-others / Unknown
Toxo Ab-IGM
Toxo-Total Ab
Toxo Ab-IGG
Mantoux-TB Screen
HIV ANTIBODY (HIV 1/2)

Urea

Appendix C - OCS Committees Terms of Reference

1. Scientific Steering Committee Terms of Reference

Version 2012 07 03

Purpose and Function

1. To provide expertise, advice and guidance in support of the role and responsibilities of the Principal Investigator and Co-Principal Investigator of the OHTN Cohort Study (OCS).
2. To establish and periodically update the principal aims, research priorities and objectives of the OCS research agenda in consultation with the OCS Governance Committee and other OHTN stakeholders.
3. To provide scientific leadership and expertise for the OCS by:
    a. Identifying priority research questions;
    b. Participating in the collaborative development of OCS Concept Sheets, Research Project Proposals, and applications for external funding to support OCS analysis projects;
    c. To review and provide constructive feedback on OCS Concept Sheets when required;
    d. To provide formal scientific review and approvals of Research Project Proposals prior to their review by the OCS Governance Committee as described in the OCS Research Policies;
    e. Participating in the development of any changes to the OCS scientific protocol and study design, including modifications to recruitment and data collection procedures;
    f. Participating in the analysis of OCS data, and the preparation of related presentations and publications.

Composition, Roles and Responsibilities

Chair

The Chair will be appointed by the OCS Principal Investigator under recommendation of the members of the Scientific Steering Committee. The role and responsibilities of the Chair include the following.

- Support and work collaboratively with the OCS Principal Investigator and/or Co-Principal Investigator to:
    - develop and implement the OCS research agenda;
    - encourage collaboration, facilitate discussion and consensus-building, and stimulate productivity of the Committee;
    - ensure that scientific and community participation on research protocols, reports, presentations and publications are properly and equitably acknowledged to reflect contributions; and
    - develop meeting agenda.
- Informally review and approve OCS Concept Sheets in collaboration with the OCS Principal Investigator and Co-Principal Investigator with the intent to: (1) minimize duplication; (2) track the OCS research agenda; and (3) identify synergies between projects/teams. When deemed appropriate, invite researchers to present their Concept Sheets to the Scientific Steering Committee prior to their development of a full Research Project Proposal for informal feedback and to identify additional collaborators. This will be strongly encouraged for junior investigators, graduate students or those new to the OCS.
- Provide feedback to investigators following formal scientific review of Research Project Proposals by the Scientific Steering Committee.

- Recommend Research Project Proposals to advance to the OCS Governance Committee for review and approval.
- Chair meetings of the Scientific Steering Committee.
- Bring forward previous meeting minutes for review and approval.
- Coordinate votes on key decisions, when required. In the event of a tie, the Chair can cast a vote to break the tie.

Members

The membership will be comprised of the Principal Investigator, Co-Principal Investigator, and OCS Site Investigators (or their delegates) and;

- The Chair of the OCS Governance Committee or his/her designate will be a member of the Scientific Steering Committee; and
- The Chair of the OCS Governance Committee may designate up to two community members who may be persons living with HIV/AIDS and/or other community representatives to be members of the Scientific Steering Committee.
- Co-investigators from OCS sites are welcome to participate in meetings on an *ad hoc* basis, but each OCS site will have a single vote on any voting matters (see *Quorum* below).

The roles and responsibilities of SSC members include the following.

- Review OCS Concept Sheets submitted by researchers and provide scientific advice and guidance to assist researchers in developing practical and scientifically sound Research Project Proposals and requests for external funding to support those activities.
- Undertake scientific reviews of Research Project Proposals upon request.
- Identify opportunities and make recommendations for collaboration among researchers based on the reviews of submitted OCS Concept Sheets and Research Project Proposals..
- Review and make recommendations for approval, modifications or rejection of Research Project Proposals submitted by researchers.
- Contribute to the establishment of the principal aims, priorities, and objectives of the OCS research agenda.
- Consult and provide recommendations on scientific issues relating to the OCS, including study design.

Terms of appointment

The Scientific Steering Committee Chair will be appointed for a two-year term, renewable under recommendation from the OCS Principal Investigator and the members of the Scientific Steering Committee. OCS site investigators may remain members of the Scientific Steering Committee indefinitely for as long as the site is designated as an OCS site. OCS Governance Committee members of the Scientific Steering Committee will be appointed for a two-year term.

Quorum

It is expected that the Scientific Steering Committee will make decisions through discussion and consensus. However, if consensus on an issue cannot be reached, 50% plus-one-member will be considered quorum for voting on all Committee decisions.

Reporting Relationship

The Scientific Steering Committee is established by the OCS Principal Investigator and Co-Principal Investigator in support of their responsibilities in relation to the OHTN Cohort Study. The OCS Principal

Investigator will regularly update the OHTN Board of Directors on the activities of the Scientific Steering Committee.

Meetings

The Scientific Steering Committee will meet by teleconference on a quarterly basis (at minimum). Quarterly meeting dates will be published on the OCS website (www.ohtncohortstudy.ca) with clear notice of deadline dates for submission of materials for scientific review (e.g., Research Project Proposals). The Scientific Steering Committee will also meet annually at the OCS Research Retreat. Additional *ad hoc* in-person meetings and/or teleconferences may be scheduled as required at the call of the Chair or OCS Principal Investigator or Co-Principal Investigator.

Minutes

Minutes of all committee meetings will be maintained at the OHTN office. Any information that is considered confidential will be stored separately from the Minute Book and will not be distributed publicly.

2. Governance Committee Terms of Reference

Version 2016 06 17

Purpose and Functions

- To recommend to the OHTN Board of Directors policies to govern the collection, use and disclosure of OHTN Cohort Study (OCS) Data including, but not limited to:
  - the review and disposition of requests for access to the OCS Data for purposes of scholarly research
  - measures to protect the confidentiality and security of OCS Data

  These policies shall be consistent with: the OCS Scientific Protocol; the vision, mission and values of the OHTN; and the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans* (TCPS 2, 2014).
- To review and approve, or otherwise dispose of, requests for access to the OCS Data in accordance with the policies described above, and fulfill all other responsibilities delegated to the OCS Governance Committee by those policies and by the by-laws, Board-approved policy or Board resolution.
- To provide guidance, advice, direction and strategies relating to the conduct of research in the maintenance and development of the OCS in accordance with the OCS Scientific Protocol and the OHTN's vision, mission, values and strategic plan, and in consultation with the OHTN's stakeholders and others as relevant.
- To recommend standards for research activities of the OCS, including the recruitment of participants, conduct of research and dissemination of research findings.
- To monitor OCS research activities in relation to the OCS Scientific Protocol, the policies described above and the OHTN's vision, mission, values and strategic plan, and report to the Board.
- To provide guidance, advice, direction and strategies for researchers and others interested in conducting scholarly research using the OCS Data.
- To support and contribute to the knowledge transfer, exchange and dissemination of OCS research findings.

Membership

Standard provision. In addition:

- The Committee is comprised of a minimum of 7 members (including the chair), of which:
  - The majority must be people living with HIV/AIDS
  - At least one member has experience on a research ethics board and/or other training/experience in the application of research ethics
  - At least two members have experience conducting HIV research
  - At least one member has experience in HIV clinical care
  - At least one member is also a director
- Applications for new members are welcome from all OHTN stakeholders and will be considered for recommendation to the Board for aappointment.
- The chair and/or Scientific and Executive Director may, at their discretion, invite external reviewers and/or others to participate in the committee's activities to ensure rigorous and fair review of individual research proposals or consideration of other OCS-related matters.

Responsibilities of Committee/Work Group Members

Standard provisions.

OHTN Code of Conduct and Ethical Responsibilities

Standard provision.

Term

Standard provision. In addition:

- Subject to the following, committee members shall serve at the pleasure of the Board for one 3 year term, renewable for one further 3 year term (i.e., for a maximum of 2 consecutive terms). Exceptionally, the Board may approve the appointment of a committee member for a further term or terms.
- The terms of committee members who are directors will be determined by the duration of their term as a director; if that directorship expires before the 3 year term has concluded, the Board may confirm their continued committee membership as a non-director for the balance of the term (and any further renewal).

Chair

Standard provision. In addition:

- The chair must have served a minimum of one term on the committee.

Responsibilities of Committee Chair

Standard provisions.

Reporting Relationship

Standard provisions. In addition:

- To the Board through the committee chair (or designate).
- If the committee chair is not a director, he or she shall designate a committee member who is a director to fulfill this responsibility, but the committee chair is nonetheless entitled to attend Board meetings and report to the Board directly at their discretion and/or may be required to do so by the Board.

OHTN Staff Support

Standard provisions.

Frequency of Meetings

- Quarterly at minimum, with additional meetings in person or by teleconference as required at the call of the chair.

Quorum

- Quorum requires
  - a majority of committee members; and
  - a majority of the committee members in attendance must be people living with HIV/AIDS.

Voting

- Questions arising at any committee meeting shall be decided by a majority of votes.
- The committee chair is entitled to vote and, in the case of a tie, shall have a second or casting vote.
- For any motion to carry, the majority of votes must include a majority of those members present who are people living with HIV/AIDS.

Minutes

Standard provisions.

Openness to the public

Standard provisions. In addition:

- The confidentiality of committee meetings and minutes includes, but is not limited to, the review and consideration of research project proposals and other requests for use and/or disclosure of OCS data.

- Copies of reviews of research project proposals will be provided to applicants; the names of all reviewers, however, will remain blinded.

3. **Indigenous Data Governance Circle Terms of Reference**

Purpose and Functions

- To recommend to the OHTN Board of Directors policies to govern the collection, use and disclosure of OHTN Cohort Study (OCS) Data pertaining to Indigenous Peoples, including, but not limited to:
  - the review and disposition of requests for access to the OCS Data for purposes of scholarly research
  - measures to protect the confidentiality and security of OCS Data

  These policies shall be consistent with: the OCS Scientific Protocol; the vision, mission and values of the OHTN; and the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans* (TCPS 2, 2014).
- To review and approve, or otherwise dispose of, requests for access to the OCS Data pertaining to Indigenous people in accordance with the policies described above, and fulfill all other responsibilities delegated to the OCS Governance Committee by those policies and by the by-laws, Board-approved policy or Board resolution.
- To provide guidance, advice, direction and strategies relating to the conduct of research in the maintenance and development of the OCS in accordance with the OCS Scientific Protocol and the OHTN's vision, mission, values and strategic plan, and in consultation with the OHTN's stakeholders and others as relevant.
- To recommend standards for research activities of the OCS, including the recruitment of participants, conduct of research and dissemination of research findings.
- To monitor OCS research activities in relation to the OCS Scientific Protocol, the policies described above and the OHTN's vision, mission, values and strategic plan, and report to the Board.
- To provide guidance, advice, direction and strategies for researchers and others interested in conducting scholarly research using the OCS Data.
- To review, and approve release of study findings with results relevant to Indigenous Peoples.
- To support and contribute to the knowledge transfer, exchange and dissemination of OCS research findings.

Membership

Standard provision. In addition:

- The Committee is comprised of no less than 5 members (including the chair), of which:
  - All members must self-identify as Indigenous Peoples of Turtle Island
  - At least 2 must be people living with HIV/AIDS
  - One member shall be an OHTN Board member (at the discretion of the Board)

- One member should be a knowledge keeper or elder

- The chairs and/or Principal Investigator/OCS Director may, at their discretion, invite external reviewers and/or others to participate in the committee's activities to ensure rigorous and fair review of individual research proposals or consideration of other OCS-related matters.

Responsibilities of Committee/Work Group Members

Standard provisions.

OHTN Code of Conduct and Ethical Responsibilities

Standard provision.

Term

Standard provision. In addition:

- Subject to the following, committee members shall serve at the pleasure of the Board for one 3 year term, renewable for one further 3 year term (i.e., for a maximum of 2 consecutive terms). Exceptionally, the Board may approve the appointment of a committee member for a further term or terms.

Chairs

Standard provision. In addition:

- The chair will rotate by meeting and the next meeting chair will be appointed at the end of the prior meeting.

Responsibilities of Committee Chairs

Standard provisions.

Reporting Relationship

Standard provisions. In addition:

- To the Board through the committee chairs (or designate).

OHTN Staff Support

Standard provisions.

Frequency of Meetings

- Annual at minimum, with additional meetings in person or by teleconference as required at the call of the chair.

Quorum

- Quorum requires
    - a majority of committee members eligible to vote.

Voting

- Questions arising at any committee meeting shall be decided by consensus.
- For any motion to carry, there must be a consensus of meeting attendees.
- In case consensus cannot be met, committee may determine alternate voting procedure on an ad hoc basis.

Minutes

Standard provisions.

Openness to the public

Standard provisions.

In addition:

The confidentiality of committee meetings and minutes includes, but is not limited to, the review and consideration of research project proposals and other requests for use and/or disclosure of OCS data.

- Copies of reviews of research project proposals will be provided to applicants; the names of all reviewers, however, will remain blinded.

Appendix D – Request for Off-site Data Use Form

Version 4.0

REQUEST FOR OFF-SITE DATA USE FORM

The OCS Request for off-site data use form is intended for use by staff to request to complete work from home or off-site.

◊ Background Information

Date of Request	
Name and position of person requesting off-site use of OCS data	
Manager	
Date Required	
Anticipated Project Completion Date	

◊ Task Title

◊ Task Description and Objectives

◊ Justification for Off-Site Use

PLEASE PROVIDE A BRIEF SUMMARY OF WHY OFF-SITE ACCESS IS BEING REQUESTED.

◊ Description of Data Requested

PLEASE INDICATE WHICH DATA IS REQUIRED – VARIABLES, YEARS REQUESTED, ANY HIGH RISK DATA ELEMENTS.

◊ Additional Comments

◊ Acknowledgement and Agreement

By signing and submitting this form, (a) I agree to use the data requested only for the purpose or the purposes approved by the OCS Principal and/or Co-Principal Investigators, and acknowledge that use of the requested data for any other purpose or purposes whatsoever is not authorized by the OHTN; (b) I acknowledge that any breach by me of the above agreement may result in liability for damages to third parties imposed upon me or OHTN or both, and agree that I will indemnify OHTN for all claims, demands, losses, or liabilities that OHTN may be subject to by reason of, or in any way arising out of, the breach by me of this agreement; (c) I acknowledge that the OHTN does not warrant the completeness, accuracy or quality of the information provided pursuant to this request and assumes no responsibility or liability of any kind associated in any way with my use of this information.

_____ _____

Staff Requesting Off-Site Use **Principal Investigator, OCS**

Date:_____ Date:_____

AND/OR

_____ _____

Manager **Co-Principal Investigator, OCS**

Date:_____ Date:_____

PROJECT TEAM MEMBER ACKNOWLEDGEMENTS

RESEARCH PROJECT:

PROJECT TEAM MEMBER ACKNOWLEDGEMENTS

Any project team member accessing OCS data should review the following terms:

A. The Project PI has identified YOU as a Project Team Member who requires access to the Dataset; and

B. The Research Project involves activities related to the OHTN Cohort Study (the **"OCS"**) using a Dataset provided by the OHTN from the Central Research Database of the OHTN (**"OCS Data"**);

C. The Project PI has entered into a Research Agreement dated <insert Effective Date> (the **"Research Agreement"**) which, among other matters, requires the Project PI to provide OHTN with a copy of this signed acknowledgement by each member of the Project Team who requires access to the Dataset prior to such individual being permitted to have access to the Dataset;

D. It is essential to the OHTN and its funding agencies that confidentiality and security of information related to OCS Participants provided to the OHTN for use in its Research endeavours is maintained in order to protection the privacy of OCS Participants and, in particular, is handled in compliance with the *Personal Health Information Protection Act, 2004*, the OCS Research Policies, the requirements of the REB that approved the Research Project, and the Research Agreement.

Please review and acknowledge the following:

1. I agree that, as a member of the Project Team, I:

   (a) shall hold in confidence and keep confidential all of OHTN's Confidential Information; and

   (b) will not use Confidential Information for any purpose other than for the purposes of the Research Project, unless I have the prior written authorization of the OHTN to do so; and

   (c) will comply with the conditions and restrictions specified by the Research Ethics Board approval submitted by the Project PI to the OHTN with the Research Project Proposal to access OCS Data for the purposes of the Research Project; and

(d) will keep all OCS Data in a physically secure location to which access is given only to the Project PI and members of the Project Team who are permitted to access the information in accordance with the provisions of the Research Agreement; and

(e) will not link to, or combine the Dataset with other information which could result in the re-identification of OCS Participants, even if such other information has been provided to the Researcher for Research purposes, is publicly available and/or is otherwise known to the Researcher; and

(f) will not contact any individual to whom OCS relates, directly or indirectly, without the prior written authorization of the OHTN; and

(g) shall ensure that no OCS Data will be used or disclosed in a form in which the individual to whom it relates can be identified; and

2. I shall handle all Confidential Information in a manner consistent with the OCS Research Policies unless the Policies are in some respect inconsistent with the terms herein, in which case the terms herein shall apply.

3. I shall notify the Project PI in writing immediately upon becoming aware that any of the conditions set out in this Confidentiality Agreement have been breached.

PROJECT TEAM MEMBER: _____

Reviewed ON this _____ day of _____

Appendix F – Concept Sheet Form

2. OHTN Cohort Study (OCS) Concept Sheet

Version 2014 11 05

Principal Investigator/Affiliation	
Contact Information	
Co-Investigators/Affiliations	
Date Submitted	

Project Title

Project Description (maximum 500 words)

☐ Student Project (graduate, medical)

☐ Application for external funding (if known)

☐ Request presentation at Scientific Steering Committee Meeting (if you wish feedback prior to developing a Research Proposal)

Data Requirements

☐ Request OCS data scan to ensure sufficient sample size for analysis

☐ Project requires OCS data only

☐ Project requires additional primary data collection

EMAIL COMPLETED FORM TO THE OCS RESEARCH COORDINATOR (OHTN) AT OCSINFO@OHTN.ON.CA

FOR MORE INFORMATION ON MEETING DATES AND THE OCS RESEARCH APPROVAL PROCESS, GO TO WWW.OHTNCOHORTSTUDY.ON.CA

Appendix G – Data Scan Request Form

3. OHTN Cohort Study (OCS) Data Scan Request Form

Version 6.0

The OCS Data Scan can be used differently depending on your research needs:

a) to determine whether there are sufficient data in the OCS to further address research of interest, or
b) to provide high level socio-demographic data on people living with HIV in Ontario (e.g., to support a relevant research project, help tailor an intervention, or plan programs and projects among ASOs in Ontario)

◊ Background Information

Date of Request	
Date Required	

Principal Investigator (include title/position)	
Other Requester (include title/position)	
Institution/Organization	
Email Address	
Phone Number	

◊ Project Title

◊ Project Description & Objective(s)

◊ Inclusion & Exclusion Criteria

PLEASE INDICATE INCLUSION AND EXCLUSION CRITERIA FOR PARTICIPANTS

Inclusion Criteria:

Exclusion Criteria:

◊ Data Elements Required for Data Scan

◊ Data Summary Requested

PLEASE INDICATE CROSSTABS OR OTHER DESCRIPTIVE SUMMARIES OF KEY DATA ELEMENTS ONLY

◊ Additional Comments

◊ Proposed Use of Data Requested for Researchers/Other Requesters

PLEASE INDICATE FOR WHAT PURPOSE THE DATA WILL BE USED AND IDENTIFY ALL PERSONS WHO WILL HAVE ACCESS TO THE DATA IN ANY FORM

◊ Acknowledgement and Agreement

By signing and submitting this form, (a) I agree to use the data requested only for the purpose or the purposes approved by the OCS Principal and/or Co-Principal Investigators, and acknowledge that use of the requested data for any other purpose or purposes whatsoever is not authorized by the OHTN; (b) I acknowledge that any breach by me of the above agreement may result in liability for damages to third parties imposed upon me or OHTN or both, and agree that I will indemnify OHTN for all claims, demands, losses, or liabilities that OHTN may be subject to by reason of, or in any way arising out of, the breach by me of this agreement; (c) I acknowledge that the OHTN does not warrant the completeness, accuracy or quality of the information provided pursuant to this request and assumes no responsibility or liability of any kind associated in any way with my use of this information.

_____

Principal Investigator

_____

Other Requester

Name:
Title/position:

Appendix H – Research Project Proposal Form

OHTN Cohort Research Proposal Form

1. Principal Investigator Information

Principal Investigator(s)			
Name		Phone number	
Position		Email	
Organization			
Mailing Address			
Academic Appointment	❒ Yes ❒ No	If yes, specify University and department:	
Student Project	❒ Yes ❒ No	If yes, specify please specify program: ❒ Masters ❒ Doctorate ❒ Medical School ❒ Post Doctorate	
Project Related Responsibilities			
Prior experience with the OCS, including committee membership or OCS research projects.			
Education, knowledge, skills & experience related to role in the study.			

Principal Investigator(s)			
Name		Phone number	
Position		Email	
Organization			
Mailing Address			
Academic Appointment	❒ Yes ❒ No	If yes, specify University and department:	
Student Project	❒ Yes ❒ No	If yes, specify please specify program: ❒ Masters ❒ Doctorate ❒ Medical School ❒ Post Doctorate	

Project Related Responsibilities	
Prior experience with the OCS, including committee membership or OCS research projects.	
Education, knowledge, skills & experience related to role in the study.	

2. Co-Investigators Information

Co-Investigator(s)			
Name		Phone number	
Position		Email	
Organization			
Mailing Address			
Academic Appointment	❒ Yes ❒ No	If yes, specify University and department:	
Student Project	❒ Yes ❒ No	If yes, specify please specify program: ❒ Masters ❒ Doctorate ❒ Medical School ❒ Post Doctorate	
Project Related Responsibilities			
Prior experience with the OCS, including committee membership or OCS research projects.			
Education, knowledge, skills & experience related to role in the study.			

Co-Investigator(s)			
Name		Phone number	
Position		Email	
Organization			
Mailing Address			
Academic Appointment	❒ Yes ❒ No	If yes, specify University and department:	
Student Project	❒ Yes ❒ No	If yes, specify please specify program: ❒ Masters	

		❒ Doctorate ❒ Medical School ❒ Post Doctorate
Project Related Responsibilities		
Prior experience with the OCS, including committee membership or OCS research projects.		
Education, knowledge, skills & experience related to role in the study.		

Co-Investigator(s)			
Name		Phone number	
Position		Email	
Organization			
Mailing Address			
Academic Appointment	❒ Yes ❒ No	If yes, specify University and department:	
Student Project	❒ Yes ❒ No	If yes, specify please specify program: ❒ Masters ❒ Doctorate ❒ Medical School ❒ Post Doctorate	
Project Related Responsibilities			
Prior experience with the OCS, including committee membership or OCS research projects.			
Education, knowledge, skills & experience related to role in the study.			

3. Other Member(s) of the Research Team

Name	Organization	Position	Role in Project	Relevant Skills and Knowledge

4. Project Title

5. Duration of Project

Anticipated Start Date	
Anticipated End Date	

6. Plain Language Statement

Plain Language Statement *(maximum 500 words)* Summarize the proposed project in language that will be intelligible to a lay reader. Include what you hope to learn from this study.

7. Research Objectives and Rationale

Research Objectives and Rationale List the proposed research objectives/questions and/or hypothesis(es), if applicable. Include a rationale for the study based on clinical experience, relevant scientific literature, etc. Indicate if this research is novel, or a replication of a study in a different setting or with a different population.

8. Relevance and Impact

Relevance and Impact What do you hope to learn from the study? Describe how the successful completion of the project will improve services or prevention interventions for those infected and/or at risk of HIV? How will it benefit the priority population(s)? Does it have the potential to shift current research, clinical practice or service paradigms? If yes how?

9. Community Engagement and Knowledge Translation and Exchange

Community involvement in OCS research projects is a critical component of OCS principles and values, and is recommended in all stages of research. Provide a plan for community engagement and results dissemination to scientific, community based, and stakeholder audiences.

Community Engagement Summarize how community was involved in the development of the research idea and/or how they will be involved across the project. Describe how you intend to get input from diverse members of the community, in particular members of priority populations and/or subpopulations most affected by the issue of the study.

Knowledge Translation and Exchange List the evidence-sharing activities, methods and approaches to be used and how they are likely to support the intended impacts? How will you put research evidence into the hands of people who will use it?

10. Inclusion of participants of all genders, ages and ethno-racial backgrounds

The OCS is committed to the inclusion of participants from groups that have historically been under-represented, such as racialized people, women, transgender people, and young people.

Inclusion Please indicate how you intend to ensure inclusivity in this research project. Please justify any exclusions in your study based on race, gender, age, etc.

11. Data Elements and Analysis Plan

Data Requested	
Will this project be with OCS-IC/ES linked data?	❒ Yes ❒ No
Are you requesting the analysis be carried out by the OCS research team?	❒ Yes ❒ No
List the specific OCS data elements requested. Justify requests for any High Risk Data Elements (listed in *OCS Data Release Policy*). You may attach the list in a separate document.	

Methods What are the inclusion/exclusion criteria? Describe your data analysis plan. What associations will you test? What are the outcomes associated with your research objectives/questions? Are there particular statistical methods that will be used? If appropriate, what do you plan to include as co-variates in a multi-variable regression?

12. Benefits and Harms

Benefits and Harms Indicate any issues relating to: 1) vulnerability of participants, 2) potential risks to participants, 3) adequacy of protection against risks, 4) potential benefits to the participants and others, and 5) importance of the knowledge to be gained.

13. Ethical Review Requirements

Ethical Review Requirements Describe the requirements and/or plan for ethical review of the proposed research. Indicate if the research proposal qualifies for implicit REB approval under the OCS multi-site study approval with the University of

Toronto REB. If the study qualifies for implicit approval, what are the particular study objectives in the OCS Scientific protocol that apply.

14. Data Management and Security

Data Management and Security List the names of all Researchers who will have access to the OCS research data set (must also be listed as co-investigators). All Researchers must adhere to the OCS Data Security Requirements for Researchers. If this is not possible, describe and justify an alternative Data Management and Security Plan.			
Person with Access	Affiliation	TCPS2 Completion	Why Access is Required?

15. Study Documents.

The following Study documents should be included for review:

External Scientific Reviews (if applicable) *For Researchers who have undergone external scientific review as part of an application for funding, attach copies of the scientific reviews.*	☐ Attached ☐ Not Applicable
Curriculum Vitae *Include copies of CVs for the Principal and any Co-Principal Investigators.*	☐ Attached
Research Ethics Board Approval Letter *If applicable, include a copy of the REB letter of approval for the Research Proposal. They are required prior to OCS data release.*	☐ Attached ☐ Not Applicable
Letter from Academic Supervisor (*if applicable*) *Student PIs are asked to include a letter of support from their academic supervisor.*	☐ Attached ☐ Not Applicable

Appendix I – OCS Data Release Guidelines for High Risk Data Elements

OCS Data Release Guidelines for High Risk Data Elements
Version 4.0 2012 05 16

The OCS database does not contain any personal identifiers such as name or health card numbers. However some data elements alone (e.g. birth place is a small country) or in combination with other data elements have a higher risk of inadvertently identifying an OCS participant. To mitigate the risk of residual disclosure, the following list of data elements are reviewed prior to releasing a data cut to researchers. The standard version of the data elements is the preferred release format. In determining risk level and potential for re-identification of participants, requested data elements will also be considered in combination.

Investigators with protocols containing data elements approved for conditional release must submit all results to the OCS Governance Committee for review, prior to public release of any kind (including abstracts, manuscripts and presentations). Reporting results by site also requires review by OCS site principal investigators who may opt out of the project if they prefer that data not be reported for their site.

Data Element	Standard Release	Conditional Release (highest risk)

Age	▪ Age calculated, e.g.:
	  ▪ at baseline questionnaire date
	  ▪ at minimum HIV+ test date
	▪ Year of birth
		▪ Year/month of birth

Vital Status	▪ Cohort status category along with:
	  ▪ first consent date
	  ▪ year of last follow up
	  ▪ follow up time in years
	▪ Death indicator and year of death
		▪ Year/month or vital status date

Residence	▪ LHIN ▪ Urban/Rural indicator ▪ First digit of postal code	▪ First three digits of postal code (forward sortation area, FSA)
Country of Birth	▪ Endemic/Canada/Other ▪ Region of Birth (8-10 regions)	▪ Country of birth code and text description

Race
 	
(multiple response)
	▪ Original multiple response categories where
	  ▪ count is 6 or larger
	  ▪ if count is less than 6, recode as other
	  ▪ include other category but not the 'specify' field
	▪ Aboriginal indicator
	▪ Hierarchical categories upon request
		▪ Original categories with count less than 6
		▪ Other, specify

Ethnicity
 	
(multiple response)
	▪ Original multiple response categories where
	  ▪ count is 6 or larger
	  ▪ if count is less than 6, recode as other
	  ▪ include other category but not the 'specify' field
	▪ Hierarchical categories upon request
		▪ Original categories with count less than 6
		▪ Other, specify

Immigration Status	▪ Canadian Born/Canadian Citizen/Landed Immigrant/Other ▪ Length of Residence (5 year intervals)	▪ Year of immigration
Genotyping Data	▪ Date of genotyping test ▪ Drug resistance (yes/no) ▪ Drug resistance (3 drug classes) ▪ Clade (B vs non-B)	▪ Complete genetic sequences ▪ List of specific mutations
Site	▪ Provided in original coding for data quality purposes (i.e. not to be reported in research results) ▪ Anonymous recoding for less experienced researchers	▪ Sites will be reported in research output.

Appendix J – OCS Minimum Data Security Requirements

OHTN Cohort Study
Minimum Data Security Requirements for Researchers
Version October 2021

These guidelines outline the minimum data security requirements for OHTN Cohort Study (OCS) data received by researchers for protocols approved by the OCS Governance Committee.

These guidelines apply to those protocols requiring a dataset where there is minimum risk of residual disclosure as determined by the OCS Governance Committee. These data security requirements must be adhered to unless otherwise noted in the approved research protocol. For protocols where the OCS Governance Committee has deemed that there is a foreseeable potential risk of residual disclosure, additional measures may be required.

1. Transfer

a. All persons who will have access to the data must be listed on the approved research protocol and have signed Researcher's Agreements on file at the OHTN.

b. The OCS research dataset will be stored and transferred to the OCS Investigators in an encrypted (minimum 256-bit) and password-protected format. Passwords will be provided to Investigators separately.

2. Encryption

a. Data must be maintained in an encrypted format (minimum 256-bit) except where it is necessary to decrypt during use. Encryption software such as Truecrypt is available for free download at http://www.truecrypt.org/.

3. Protection

a. Investigators must store and access the OCS research dataset on a computer located in a secure server environment (i.e. protected by firewalls) or a stand-alone computer with no access to the internet. Portable devices (laptops or USB Memory Sticks) may be used but must adhere to the encryption requirements (Section B).

b. Computers housing an OCS research dataset must be located in a secure physical area (i.e. institutional environment with restricted access and lockup capability).

c. Computers housing an OCS research dataset must be accessed through user login and entry of a complex/strong password. Complex/strong passwords are comprised of a minimum of six alphanumeric characters in length with a combination of upper and lower case characters, numbers and punctuation.

d. Computers housing an OCS research dataset must have password-protected screensavers enabled using a complex password (see above) with a time-out interval deemed appropriate.

e. Accessing data stored on the host's secure server and network environment through remote access is only permissible if there is an established secure and encrypted connection to the network such as facilitated by a VPN (Virtual Private Network) only – connections using RDP (remote desktop protocol) without VPN is prohibited.

4. Data Sharing/Transfer between Investigators

a. Investigators are advised to refrain from making copies of the research dataset where possible. However making a back-up copy of the dataset is recommended and permitted. All copies of the dataset must be encrypted (minimum 256-bit)

b. Where data must be shared or transferred between Investigators, it must be encrypted (minimum 256-bit) and secured with a strong/complex password (Section 3C). Passwords must be provided to Investigators separately.

c. All Investigators who receive an OCS research dataset must adhere to the encryption and protection guidelines listed above (Sections B and C).

5. Data Destruction

a. Upon completion of the research study, all copies of the OCS research dataset must be destroyed as soon as possible or in accordance with the guidelines of the REB.

b. All datasets including those housed on backup media and temporary copies must be digitally overwritten with a minimum of 7 passes. File shredding software is available for free download at http://www.fileshredder.org/.

c. Physical media such as compact discs must be broken, shredded or returned to the OHTN for destruction.

6. Data Loss or Exposure

a. Investigators are responsible for monitoring and ensuring the security and protection of the OCS research dataset.

b. If the event of data loss or exposure, it is the responsibility of the Investigator to contact the OCS Project Manager immediately to report.

Appendix K – Request for off-site Data Use by Students/Trainees Form

Version 1.0

REQUEST FOR OFF-SITE DATA USE BY STUDENTS/TRAINEES FORM

This OCS Request for off-site data use form is to be completed by the student/trainee who will be creating the OCS data cut. The student/trainee must:

a. be specifically authorized by the OHTN Scientific & Executive Director
b. be supervised by an OHTN Staff Scientist,
c. be trained by authorized OHTN staff, and
d. have the OCS Data elements reviewed by authorized OHTN staff prior to data shipment and documented.

◊ Task Description and Objectives

◊ Justification for Off-Site Use

PLEASE PROVIDE A BRIEF SUMMARY OF WHY OFF-SITE ACCESS IS BEING REQUESTED.

◊ Description of Data Requested

PLEASE INDICATE WHICH DATA IS REQUIRED – VARIABLES, YEARS REQUESTED, ANY HIGH RISK DATA ELEMENTS.

◊ Additional Comments

◊ Acknowledgement and Agreement

By signing and submitting this form, (a) I agree to use the data requested only for the purpose or the purposes approved by the OCS Principal and/or Co-Principal Investigators, and acknowledge that use of the requested data for any other purpose or purposes whatsoever is not authorized by the OHTN; (b) I acknowledge that any breach by me of the above agreement may result in liability for damages to third parties imposed upon me or OHTN or both, and agree that I will indemnify OHTN for all claims, demands, losses, or liabilities that OHTN may be subject to by reason of, or in any way arising out of, the breach by me of this agreement; (c) I acknowledge that the OHTN does not warrant the completeness, accuracy or quality of the information provided pursuant to this request and assumes no responsibility or liability of any kind associated in any way with my use of this information.

a) Authorization of OHTN Scientific & Executive Director

_____ _____

OHTN Scientific & Executive Director Signature Date

b) OHTN Staff Scientist Supervision

_____ _____

OHTN Staff Scientist Signature Date

c) Training completed

_____ _____

Authorized OHTN staff Signature Date

d) Review of final data set(s)

- Review of Standard Dataset
- Residual Disclosure Risk Assessment

_____ _____

Authorized OHTN staff Signature Date

Appendix L– Breach Report Form

Version 1.0

BREACH REPORT FORM

PART A: TO BE SUBMITTED WITHIN FORTY-EIGHT (48) HOURS OF NOTIFYING THE OCS PI OF THE BREACH		
SECTION I: GENERAL INFORMATION		
#	**Information**	**Response**
1(a)	**Individual Completing Breach Report Form**	<Enter name and role in Research Project or other here>
1(b)	**Phone Number**	<Enter phone number here>
1(c)	**Email Address**	<Enter email address here>
1(d)	**Date OCS PI First Notified of Breach and By Whom**	<Enter date here> <Enter name and role in Research Project or other here>
1(e)	**Report Date**	<Enter date here>
1(f)	**Version Number**	<Enter version number here>
SECTION II: DESCRIPTION OF BREACH – PRIVACY BREACH ***Please provide all of the information requested below.***		
2(a)	**Describe the data that was the subject of the privacy breach.**	

	(*e.g. Dataset, certain record-level data from the Dataset)*	
2(b)	**Describe the nature of the breach, including the who? what? when? and where?** *(e.g. the Dataset was downloaded onto an unencrypted USB key which cannot be located; the system housing the OCS Data was the subject of a cyber security attack)*	
2(c)	**Describe the immediate steps taken to contain the breach** *(e.g. the Institution's security incident response team was brought in to investigate; law enforcement was notified)*	
2(d)	**Describe the current status of the breach/investigation** *(e.g. the system was shut down so the breach has been contained; a forensics cyber consultant is now investigating the source of the attack)*	
2(e)	**What led to the breach?** *(e.g. failure of Team Member to follow terms of the Research Agreement; inadequate technical security controls on the system housing the OCS Dataset)*	
2(f)	**What additional steps must be taken to complete the investigation?** *(e.g. completion of forensics investigation and report)*	

2(g)	**When will these steps be taken?**	
2(h)	**What steps will be taken to manage the risk of the reoccurrence of the breach?** *(e.g. implementation of additional technical safeguards on the system housing the OCS Dataset)*	
2(i)	**When will these steps be taken?**	
SECTION III: AGREEMENT BREACH (OTHER THAN A PRIVACY BREACH) ***Please provide all of the information requested below.***		
3(a)	**Describe the nature of the breach, including the who? what? when? and where?**	
3(b)	**Identify the provision of the Research Agreement that was breached**	
3(c)	**Describe the steps taken to manage the breach**	
3(d)	**Describe the current status of the breach/investigation**	
3(e)	**What led to the breach?**	

3(f)	**What additional steps must be taken to complete the investigation?**	
3(g)	**When will these steps be taken?**	
3(i)	**When will these steps be taken?**	

PART B: TO BE SUBMITTED TO OHTN CONFIRMING THE COMPLETION OF ALL OUTSTANDING ACTIVITIES IDENTIFIED IN PART A

Please Use the Same Number and Information as in Part A to provide your updated response.

#	Information	Response

Appendix M – OCS PROJECT PROGRESS REPORT

Version 1.0

1. Principal Investigator(s) Name

2. Project Title

3. Have there been any major changes to your project?

4. Please describe your successes and/or challenges in meeting your research objective(s).

5. Have there been changes or alterations to the study team?

☐ Yes (*If yes, please submit a Project Team Change Form*)
☐ No

6. Please list any academic conference presentations using OCS data this year.

Title	Date (M.D.Y)	Keynote	Oral	Poster	Abstract	Other
		☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐

7. Please indicate if you have presented data to any of the following audiences in the past year:

Type	Check if applicable	If yes, how many?

Care provider audience (Rounds)	☐ Yes	
Outreach to target population	☐ Yes	
Policy makers or other decision makers	☐ Yes	
Community/Stakeholder Consultation	☐ Yes	
Consultation with People Living with HIV	☐ Yes	

8. Please list any peer-reviewed publications.

Title	In-prep	Submitted	Under Review	Accepted	Published
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

9. Did you publish any community or other non-academic reports using OCS data this year? If so, list the title, target audience and provide a link if available.

Impact

10. Have your research outcomes led to changes in practice or policy in your area of study? If so, please describe.

OCS PROJECT TEAM CHANGE REPORT

1. **Principal Investigator(s) Name**

2. **Project Title**

3. **Please list any outgoing members of the study team.**

Name	Role in Project

4. **Please list any incoming members of the study team.**

Name	Organization	Position	Role in Project	Relevant Skills and Knowledge

5. **Which new members will have access to the data?**

Name	TCPS II Certification	OCS Project Team Member Acknowledgment form submitted?	Why Access is Required?

6. **Please indicate if there is a change in Principal Investigator(s).** ☐

Indicate the reason for a change in PI.

Please indicate incoming PI(s) and attach the new PI(s)' Curriculum Vitae (CV).

Name		Phone Number	
Position		Email	

Any change in PI must be approved by the OCS Governance Committee. All project work must be ceased until the new PI is approved.