

**National Cancer Institute (NCI)
Integrated Canine Data Commons (ICDC) Steering Committee (SC)**

**Teleconference
Wednesday, September 25, 2019**

Participants (*Present)

External Committee Members

Matthew Breen*
Renee Chambers*
Dawn Duval*
Allison Heath*
Will Hendricks*
Warren Kibbe*
Debbie Knapp, ICDC-SC Chair*
Cheryl London*
Jeff Trent*
Roel Verhaak*
Shaying Zhao*

Internal Committee Members (NCI, National Institutes of Health, and Frederick National
Laboratory for Cancer Research [FNLRCR])

Matthew Beyers*
Allen Dearth*
Toby Hecht*
Paula Jacobs*
Tony Kerlavage
Erika Kim*
Amy LeBlanc*
Christina Mazcko
Philip Musk
Elaine Ostrander
John Otridge
Ralph Parchment, ICDC-SC Managing Secretary*
Connie Sommers*
Greg Tawa

Others

Qi Long* (guest)
Nicola Mason* (guest)
Lori Lydard
Tara Whipp*
Mary Cerny (writer)*

Opening and Welcome

Drs. Knapp and Parchment opened the meeting at 11:35 a.m. ET and welcomed those in attendance.

Dr. Knapp introduced two guests, Dr. Qi Long and Dr. Nicola Mason, from the University of Pennsylvania. Drs. Long and Mason head the U24 coordinating center for the NCI-supported U01 canine clinical trials and are part of the Pre-Medical Cancer Immunotherapy Network for Canine Trials (PRECINCT). Data from these trials will become part of the ICDC. PRECINCT provides infrastructure to a collaborative and interactive network of researchers and clinician scientists working at participating U01 sites to investigate immunotherapeutic strategies in dogs with cancer and to identify correlates of immunological and therapeutic responses. PRECINCT has developed SOPs that can be applied across all PRECINCT-associated U01 projects to ensure high-quality, repeatable data sets.

The list of data that PRECINCT is aiming to collect is very closely aligned with what is outlined for the ICDC. Drs. Long and Mason will be collaborating with the ICDC-SC to harmonize the semantics between the two systems and figure out the best format for the PRECINCT trial data to be received, entered, and integrated into the commons. Mr. Beyers is working with the PRECINCT team to set up a conference call for further discussion and to identify next steps.

Minutes of the August Meeting

The minutes of the August 21, 2019, ICDC-SC meeting were accepted as written.

Reports from the Working Groups

Data Governance Advisory Board (DGAB) Chair's Report

The DGAB has met regularly over the past few months. As part of its ongoing work, the Board has finalized its draft guidance and workflow document for prioritization of the type of data for the ICDC. This guidance includes minimum data requirements for the ICDC and outlines the process for collection, curation, submission, and analysis of data for the canine commons. The guidance and workflow will evolve over time with ongoing feedback and revisions. The guidance/workflow document has been uploaded to the DGAB folder under the ICDC-SC folder on the Box site, which can be logged into with an NIH account or individual log-in information. Mr. Beyers will re-send the link to the ICDC-SC Box website for access to the guidance/workflow document.

ICDC-SC members were asked to review the draft guidance/workflow document to discuss at the next SC meeting. Suggested changes and revisions to the document should be sent to Dr. Knapp or Mr. Beyers in the interim.

Best Practices Subcommittee (BPS) Chair's Update

As discussed in detail during the last meeting, members, chairs, and co-chairs have been assigned to each of the four BPS working groups (WGs): Clinical and pathology standards, genomics/proteomics/multi-omics standards, immunology standards, and imaging standards.

Each WG will develop a data framework for their respective data types for the ICDC. In conjunction with the WGs developing these frameworks, the BPS will convene a meeting with members of the DGAB to align semantics and formatting for the ICDC.

Imaging WG Update

The overarching objective of the Imaging WG is to provide the comparative cancer research community with guidelines and best practices for the collection, formatting, and reporting of imaging data collected from canine companion animals with naturally-occurring cancers for the ICDC. The aims include harmonizing standards for imaging data to be deposited into the ICDC.

The initial discussions and work of the Imaging WG have focused on the curation of clinical images and imaging data for the ICDC. Dr. LeBlanc has started creating a test process using two of the approximately 200 canine clinical cases with relatively complete data sets across all of the designated parameters (clinical/pathology, imaging, genomics, immunology) to determine how to integrate these components into the ICDC. The two initial cases are from Virginia Tech, and part of this effort will include confirming which data are available, including MR images. Drs. LeBlanc and Jacobs will be working with the Virginia Tech IT and neurosurgery staff on writing a script for how to curate the canine images via a series of steps for transfer and inclusion into the ICDC. The teams plan to meet via conference call on September 30 as part of this process. Once the initial script is worked out, the WG will reach out to the other institutions that contributed case material to the set of about 200 cases (e.g., Texas A&M, University of California Davis, Auburn). The data from these various sources and institutions are interconnected in that they are from P30 grants and can be referenced as such.

The intent is to adapt the process for the curation and sharing of imaging data gathered from human patients for The Cancer Imaging Archive (TCIA) for the canine imaging data sets. The TCIA has an online application process that captures the key features of individual imaging data sets and provides customized scripts for the submission process. The TCIA supports both clinical imaging data and pathology data (scanned tissue images, histology slides), as well as multiple species (see <https://www.cancerimagingarchive.net/primary-data/>). The TCIA also has a process in place for curating data from outside contributors, which can be used as a prototype for the ICDC.

Drs. LeBlanc and Jacobs will review the technical aspects of the TCIA-based process with the Virginia Tech team. No problems with curating the canine data are anticipated, given that the same or similar instrumentation and file formats are used for both canine and human imaging and there has been more than a decade of experience in integrating human data into the imaging archive. Once the curating process is in place for the canine data sets, the imaging data will be available for anyone to operate on in conjunction with other data.

Although imaging data can be stored on the ICDC, it is not clear if images can be viewed or otherwise accessed using the ICDC, or whether the ICDC has the capacity to handle Digital Imaging and Communications in Medicine (DICOM) images. The current plan is to curate the canine images and data for the TCIA, which is already set up for viewing, manipulating, and selecting the images. Properly labeling DICOM images by species and other relevant headings is part of the curating process to ensure that searches for canine-specific data can be done; these

labels can be set up quickly in TCIA. Further plans will be needed to transfer the images into the ICDC at a later date so that the images and imaging data are accessible and usable.

Immunology WG Update

Immunology standards will be applied in three settings. Once the ICDC is set up and immunology data are being accrued, the standards for data and sample collection and analysis can be prospectively applied. In the early stages of the ICDC, the expectation is that data collected for other purposes can be mined for immune response. For data that cannot be repeated (e.g., cytokine assays), it will be important to record the methods used to generate these data. A key resource for this component of the ICDC is PRECINCT.

The WG leaders have been working with researchers and clinicians in the field and with PRECINCT, which has already generated a list of reagents and assays used in their canine studies, as noted above. The Immunology WG also plans to coordinate with the Imaging WG as the imaging curation process is being developed.

Genomics/Proteomics/Multi-omics WG Update

Members of this WG have put together a working draft of a best practices genomics workflow process that will allow for uploading of data to the cloud via different pipelines. This is a work in progress, as the group focuses on consistency and standardization of semantics and structural changes regarding canine genomics.

Other Issues

ICDC “In the News”

Dr. Hecht was recently interviewed by “Everyday Health,” a digital media organization that creates content for lay audiences related to health and wellness. The interview focused on NCI research in the area of canine immunotherapy and included a discussion about the ICDC. The interview should be published soon and will provide another opportunity to increase awareness of the ICDC and canine clinical trials.

Administrative Items

October ICDC-SC Meeting

The next meeting of the ICDC-SC will be held via teleconference on Wednesday, October 16, 2019, from 11:30 a.m. to 1:00 p.m. ET. Dr. Parchment will forward meeting information and materials ahead of the October teleconference.

Upcoming ICDC-SC Meetings

The SC will meet as usual in November but will skip the December meeting to give the subcommittees and working groups time to focus on their tasks and activities. The regular meeting schedule will resume in January. If needed, an ad hoc meeting will be convened in December.

DGAB and BPS Meetings

Dates and times of upcoming meetings are TBD. Details will be distributed to committee members when available.

Honorarium

A copy of the honorarium reimbursement form for ICDC-SC meeting participation was distributed ahead of the teleconference. External members were reminded to forward paperwork for their honorarium to Ms. Lydard. Anyone having problems with the form or reimbursement should contact Dr. Parchment.

Action Items

- Mr. Beyers will re-send the link for the ICDC-SC folder on the Box website so committee members can access the DGAB guidance document/folder.
- Committee members were asked to review the DGAB draft guidance/workflow document for discussion at the next meeting. Suggested changes and revisions to the document should be sent to Dr. Knapp or Mr. Beyers in the interim.
- Topics for future meetings should be forwarded to Dr. Knapp and Dr. Parchment.
- Dr. Parchment will forward logistics information and materials ahead of the October teleconference.

Adjournment

The meeting was adjourned at 12:05 p.m. ET.