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

Teleconference
Wednesday, December 18, 2019

Participants (*Present)

<u>External Committee Members</u>
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*

<u>Internal Committee Members (NCI, National Institutes of Health, and Frederick National Laboratory for Cancer Research [FNLCR])</u>
Matthew Beyers*
Allen Dearry*
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

<u>Others</u>
Lori Lydard
Tara Whipp
Mary Cerny (writer)*

Opening and Welcome

Drs. Knapp and Parchment opened the meeting at 11:32 a.m. ET and welcomed attendees.

Minutes of the November Meeting

Review of the minutes of the November 13, 2019, ICDC-SC meeting was deferred to the January meeting.

Reports from the Working Groups (WGs)

Data Governance Advisory Board (DGAB) Chair's Report
The revised DGAB's Draft Guidelines for Evaluating Data Submissions During Prototype Phase of the ICDC (version 4, updated December 4, 2019) are available in the ICDC-SC Box folder. With this guidance in place, the DGAB is ready to receive and review submissions for proposals for the ICDC. A single point of contact (email address) is provided for submissions, questions, comments, and other communications regarding the ICDC submission process. A plan to announce that the ICDC is open for submissions needs to be developed. Prioritization of data to include in the ICDC was discussed later during this meeting.

Best Practices Subcommittee (BPS) Chair's Update
BPS and NCI Semantic Infrastructure (SI) Team
The BPS has taken the opportunity to align issues of harmonization and formatting of the ICDC through coordination with the NCI SI Team. Harmonizing elements and simplifying components of the ICDC will facilitate access to and use of data for analysis. Some of the semantic services available from the NCI SI Team include the NCI Thesaurus (NCIt), the Cancer Data Standards Registry and Repository (caDSR), Clinical Data Interchange Standards Consortium (CDISC) data standards, and the Biomedical Research Integrated Domain Group (BRIDG) model.

One of the goals of this collaboration is to identify the unique value of the canine commons for reanalysis of data in the data sets that are being curated. One strategy to achieve this goal is to create a unified approach to calls for a range of elements, including single-nucleotide variants, complex structural arrangements, germline polymorphisms, and fusions. The ICDC is also interested in taking a deep look at germlines across breeds, across tumor types, and in affected versus healthy dogs.

Progress to date includes adding ICDC terms for nodes and dog breeds to the NCIt; those terms are available at https://evs.nci.nih.gov/ftp1/ICDC/About.html.

Drs. Kibbe and Trent will continue to take the lead on the semantic team, but all ICDC-SC members are welcome to participate. As discussed during the November meeting, Heather Gardner, D.V.M., Tufts University, will be invited to join in these discussions, particularly in the development of the cloud-based pipeline for genomics data.

Imaging WG Update
Efforts continue as reported during the November meeting. Drs. LeBlanc and Jacobs are working with the Virginia Tech IT and neurosurgery staff on writing a script for curating canine images that includes a series of steps for transfer to and inclusion in the ICDC. Dr. LeBlanc continues to take the lead on developing a test process using 2 of the approximately 200 cases in the canine clinical glioblastoma multiforme (GBM) cohort with relatively complete data sets across all of the designated parameters (clinical/pathology, imaging, genomics, and immunology) to determine how to integrate these components into the ICDC. The location of magnetic resonance imaging scans (MRIs) for dogs in the GBM cohort has been identified. The process of selecting the best "true" test cases for the initial prototypes is underway, taking into account the fact that not all of the cases in the GBM cohort have genomic data or the full complement of elements to be included in the ICDC.

The current focus is on using the first two cases from Virginia Tech to create gold-standard data sets. Other ongoing tasks include cleaning up and formatting the data to determine how best to enter the data sets into the ICDC. The team is also looking into identifying the next site to contact and work with, most likely either the University of California, Davis or Texas A&M.

Genomics WG
The WG is developing a framework to identify tools and opportunities (e.g., working with Dr. Gardner at Tufts University) for cancer-related pipelines, with a focus on cloud-based pipelines for genomics data. Further discussion of how to define data input and how to harmonize data is needed. There may be some value in doing reanalysis for harmonization.

Immunology WG
The WG is putting together a list of reliable biomarkers and is collaborating with the Clinical and Pathology WG. Some changes in how immunoassays are done are being considered as part of developing the framework for immunology data collected for the ICDC.

Clinical and Pathology WG
The WG continues working on logistics for collection of data through Research Electronic Data Capture (REDCap). The group is focused on standardization and will be taking the ClinPath libraries from REDCap to establish normal ranges. These activities will interface with the Immunology WG.

Prioritizing Essential Data Types to Include in the ICDC

The group discussed prioritization of three types of "essential" data for inclusion in the ICDC and timelines for submission of data as the ICDC prototype is built:
- *Clinical Trial Data Sets*. Examples of this type of data include results of U01 canine immunotherapy and other trials.
  - The test cases from the GBM cohort that Dr. LeBlanc is working on constitute an initial or early anticipated submission for the ICDC. A plan for how to combine and process imaging data through The Cancer Imaging Archive (TCIA) is being developed.
  - Dr. London's team is conducting studies on canine osteosarcoma under a U01 comparative oncology research grant. She described the Veterinary Observational

Medical Outcomes Partnership (OMOP V5+) common data model (CDM), which links disparate veterinary electronic medical records (EMR) data. The OMOP V5+CDM is based on the human OMOP (https://www.ohdsi.org/data-standardization/the-common-data-model/). The veterinary version has adapted the language/platform to apply to veterinary EMR data sets. It enables cohort discovery and multi-institution exchange and lays the foundation for retrospective analytics, active patient recruitment support/management, and participation in federated networks. The OMOP V5+ CDM has been deployed at Tufts; CSU and UC Davis will come on board this year. Plans for the coming year include developing federated guidelines for data access, generating a sustainability plan for OMOP V5+, and refining and deploying the Research Workbench, a tool that is used to interrogate the data sets within OMOP V5+ data base. Dr. London will coordinate with Mr. Beyers on consulting the person who set up OMOP V5+. Dr. London also offered to give the ICDC direct access to the REDCap data to facilitate moving these data to the ICDC.

- *Data Sets That Aid in Canine Model Characterization*. Examples of this type of data include data sets that help determine which canine cancer types could serve as relevant models for the human condition, including identifying similarities to and differences from human cancers.
  - o Dr. Knapp's team focuses on bladder cancer in dogs and how mechanisms and treatments in dogs may translate to bladder cancer in humans. A manuscript on results from P30-funded research is close to publication; data may be available to submit to the ICDC as early as January.
- *Germline Data to Aid Identification of Breed Differences and Similarities*.
  - o Dr. Ostrander's team is in the process of preparing a manuscript on genetic susceptibility. There may be sufficient data for analysis for a second paper that could also be considered for the ICDC.

Per this discussion, a small number of data sets appear to be ready or nearly ready to be considered for input into the ICDC. ICDC-SC members and their colleagues with such data were encouraged to begin writing proposals in accordance with the revised DGAB guidelines noted above for submission to and review by the DGAB. The NCI Senior Advisory Committee makes the final decision regarding data and proposal prioritization. Data that are not yet published can be held until publication.

Other Issues

ICDC Outreach
Committee members discussed having a presentation about the ICDC at the 2020 Paws for a Cure Research Symposium on June 22-24, 2020, in Boston.. This meeting is jointly sponsored by industry, academia, and government and would provide a good opportunity to expand outreach and increase awareness about the canine commons. Dr. Kibbe and Mr. Beyers offered to work together on a slide presentation for the meeting.

January ICDC-SC Meeting
The next meeting of the ICDC-SC will be held via teleconference on Wednesday, January 22, 2020, from 11:30 a.m. to 1:00 p.m. ET. Dr. Parchment will forward meeting information and materials ahead of the January teleconference.

DGAB and BPS Meetings
The next meeting of the BPS is scheduled for Tuesday, January 21, 2020. Dates and times of other upcoming meetings remain to be determined. Details will be distributed to committee members when available.

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

Action Items

- Dr. London will coordinate with Mr. Beyers to connect with the person who set up the OMA platform and to determine how to set up direct access to REDCap data for transfer to the ICDC.
- Dr. Kibbe and Mr. Beyers will work on a slide presentation for the upcoming meeting in Boston.
- Topics for future meetings should be forwarded to Drs. Knapp and Parchment.
- Dr. Parchment will forward logistics information and materials for the January teleconference.

Adjournment

The meeting was adjourned at 12:00 p.m. ET.