Supplementary Materials: The International Collaboration for Cancer Classification and Research (IC^{3}R)

Ian A. Cree[1], Iciar Indave[1], Jiri Zavadil[1], James McKay[1], Magali Olivier[1], Zisis Kozlakidis[1], Alexander J. Lazar[2], Chris Hyde[3], Stefan Holdenrieder[4], Ros Hastings[5], Nasir Rajpoot[6,7,8], Arnaud de la Fouchardiere[9], Brian Rous[10], Jean Claude Zenklusen[11], Nicola Normanno[12], Richard L. Schilsky[13] for the IC^{3}R participants

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List of participating institutions with a representative at the International Agency for Research on Cancer's International Collaboration for Cancer Classification and Research (IC^3R) inaugural meeting in February 2019

American Society for Clinical Pathology (ASCP)

American Society of Clinical Oncology (ASCO)

Centre Léon Bérard

Department of Cellular Pathology, University of Liverpool

Department of Pathology, GZA-ZNA Hospitals

European Medicines Agency

Exeter Test Group, University of Exeter Medical School

Genomics England, Centre for Tumour Biology

Genomics Quality Assessment (GenQA), Women's Centre, John Radcliffe Hospital, Oxford University Hospitals NHS Foundation Trust

Institute of Laboratory Medicine, German Heart Centre of the Technical University Munich

International Cancer Genome Consortium, University of Glasgow

Istituto Nazionale Tumori - IRCCS "Fondazione G. Pascale"

Molecular Diagnostics Pathology Department, Erasmus MC Cancer Institute

National Cancer Registration and Analysis Service, Public Health England

NCI's Genomic Data Commons (GDC), Center for Cancer Genomics - National Cancer Institute

Princess Margaret Cancer Centre

Royal College of Pathologists of Australasia

Spanish Biomedical Research Centre in Cancer (CIBERONC)

The Cancer Genome Atlas (TCGA), Center for Cancer Genomics Program Office

The University of Texas MD Anderson Cancer Center (Departments of Pathology & Genomic Medicine)

University of Warwick

World Health Organization (WHO) headquarters

International Collaboration for Cancer Classification and Research (IC^{3}R): proposal for a consortium

High-level collaboration for cancer classification and research: background and justification

The premise of virtually all cancer research is that it will help people who are at risk of (or who already have) the various forms of cancer, in terms of prevention, early detection, diagnosis, or treatment. But exactly how that will happen, however successful the research, is not always obvious. Most countries have clear pathways for the translation of clinical trial results into practice through drug approval and clinical guidelines, but the same cannot always be said for diagnosis or early detection, although medical devices used in diagnosis are usually covered by regulatory agencies.

The multidimensional nature of cancer classification and the way in which the WHO Classification of Tumours is constructed, as well as the scientific information overload in the field, pose important challenges for the future of tumour classification and cancer diagnosis.

The WHO Classification of Tumours is constructed using a database approach, and this underpins its publication in a series of up to 15 books and the website. Major updates will occur every 4 years, and minor updates every 2 years, led by the editorial board, which is increasingly multidisciplinary. Tumour types are classified by site, category, family, type, and subtype on the basis of a number of modalities, which may be based on histopathology but often include etiology, pathogenesis, genetics, molecular pathology, localization, and epidemiology. In the past, scientific evidence has often been of the lowest level – essentially consisting of opinion, case reports, and small series. But the advent of new technologies and relevant information from related fields is now changing our understanding of cancer classification and providing additional data that need to be assessed for consideration. For this reason, the levels of evidence of new data must be carefully evaluated in order to decide which information should determine changes in classification.

The challenges in improving the translation of evidence into practice include evaluation of the quality of evidence, as well as its quantity. The use of a systematic evidence-based approach and consensus work among experts could help address these challenges. To coordinate such a cooperation worldwide, considering all relevant parties and features, the International Agency for Research on Cancer (IARC) has initiated a high-level collaboration termed the International Collaboration for Cancer Classification and Research (IC^{3}R).

The first meeting of the IC^{3}R was held on 4–5 February 2019 at IARC in Lyon, France. During this initial meeting, IARC, as the coordinating partner, described the framework of the initiative, and invited speakers presented various issues for consideration. The mission, vision, values, and goals of the collaboration were discussed, and all participants agreed on the publication of a white paper to position the collaboration.

Mission

To provide standards for research and the appraisal of evidence for tumour classification and cancer diagnosis to facilitate rapid translation into clinical diagnostic practice.

Vision

International collaboration to provide high-level, up-to-date evidence promotes standards and enhances best practices to underpin the classification of tumours.

Goals

- To harmonize cancer-related research and data generated by IC^{3}R members, making them comparable and reproducible (e.g. via development and implementation of minimum datasets)
- To enhance international standard-setting for analytical procedures and diagnosis in pathology
- To establish quality standards for accreditation of research laboratories
- To produce evidence evaluations for clinical settings, cancer research, and epidemiology
- To identify information and research gaps (e.g. non-uniform annotations, classifications, bioinformatics, computational pathology, or clinical chemistry)
- To promote data sharing and knowledge exchange among a broad community under specific terms
- To promote evidence-based pathology and evidence-based practice in related fields
- To encourage communication between health systems, industry, and regulatory bodies

Strategic proposal for IC^{3}R: founding the consortium

To ensure the future of the IC^{3}R, IARC proposes the foundation of a consortium that will facilitate the design and implementation of appropriate measures to meet the objectives. With their contributions, members would make possible a stable managerial structure that will facilitate the planning and production of standards well into the future.

In terms of organizational structure, the IC^{3}R consortium will comprise two types of members: **Core Members** and **Full Members.**

Core Members

Coordinator: International Agency for Research on Cancer (IARC)

Steering Group: Representatives of the member institutions/organizations

Secretariat (Chair: Ian A. Cree)

Core Members provide the Steering Group and make a recurring financial contribution to IC^{3}R. This will allow the appointment of a representative delegate and as many as two alternate delegates.

The Steering Group acts as the supervisory body for the execution of the consortium's programmes, being the decision-making body. It will comprise representatives of all Core Members, in addition to the Coordinator.

Full memebers are institutions with a documented strong profile in tumour classification and related fields, who would make a reduced recurring financial contribution to IC^{3}R. Full Members can initiate research projects within the consortium and participate with reduced registration fees in events, training, and workshops organized by IC^{3}R. Full Members will have access to restricted information on a specific area of a future website.

Associated entities are organizations, networks, and consortia consisting of member institutions active in tumour classification and related fields, or individuals with a documented role in related research, implementation, or advocacy. No financial contribution will be requested and these entities do not form part of the consortium, although they will be included in email distribution lists to receive news from IC^{3}R.

Strategic planning

In the initial year, the working structure will be established, including the coordination team and a communications strategy. In parallel, workgroups will be created to address the identified challenges (harmonization of standards, information system development, evidence-based data, etc.) under the management of the Steering Group.

IARC proposes to first launch a project for the promotion and development of evidence-based pathology, as this is one of the most relevant initiatives. The coordination team has already designed a project that addresses the need for an evidence-based approach in tumour classification, which includes deliverables such as evidence levels adapted for the field of Pathology, new systematic review methods, training in evidence-based pathology, systematic review tools adapted to the requirements of the field, and most importantly: a network of reviewers and supervisors that further develop evidence-based pathology. The figure 1 illustrate the proposed framework and project.