

BCNetter

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Dear **BCNet Members**,

The response of the scientific community to the COVID-19 pandemic has been unprecedented in size, speed and discovery output. Within months of virus emergence, the SARS-CoV-2 genomics, replication, evolution and dissemination dynamics as well as natural history, infection risk and prognostic factors and biology of the disease have been gradually deciphered. However, the current healthcare crisis is only one of the many conflicting priorities, especially in resource-restricted settings.

While our efforts to address the pandemic, as one of the greatest healthcare emergencies of our times, continue to unfold, we should not forget our aims and purpose in addressing the wider healthcare needs of the population, including an ever-increasing cancer incidence. Strengthening our network allows for a wider contextual understanding and expertise to be exchanged.

To this end, we have welcomed new members to BCNet, adding to our networks across the world. These are in no particular order, the BCRJ cell bank in Rio de Janeiro, Brazil; Maseno University, Kenya

and the Instituto do Câncer do Estado de São Paulo/Fundação Faculdade de Medicina, Brazil.

The ISBER Annual meeting took place last May, and BCNet was mentioned a few times during those discussions. As ever the ISBER meeting was highly informative, with sets of very popular online discussions. This year it was a completely virtual meeting, and the high participation from colleagues from across the world was testament to the interest in biobanking across different scientific fields. The keynote presentation was provided by Dr Jim Vaught, Editor-in-Chief of the journal 'Biopreservation and Biobanking', as a thorough retrospective of the last two decades of growth in biobanking, a review of current challenges as well as future opportunities for the field. Particular focus was given this year on themes, such as the representation of under-served communities in research; on the rising stars in biobanking from across the world; the introduction of less-well known biobanking activities, such as microbial or food-related ones; as well as on the sustainability challenges faced by many.

Information on further meetings, as well as the many research and funding opportunities currently available are all included in the present newsletter. There is also a call for information by the UK Biobank and the University of Southampton.

The free access of BCNet members to IARC educational material continues through the dedicated online educational platform for biobanking available at <https://learning.iarc.fr/>. As always, your comments and contributions are most welcome.

Zisis Kozlakidis

BCNet Coordinator

Applications of Digital Health in Public Health



By Io Hong Cheong and Hui Wang, BCNet observers from the State Key Laboratory of Oncogenes and Related Genes, Center for Single-Cell Omics, School of Public Health, Shanghai Jiao Tong University School of Medicine, Shanghai, China.

Epidemiological studies provide the evidence basis for many public health decisions. Most of our current knowledge and understandings was developed using conventional research methods and models¹, e.g., questionnaires/surveys to consult social behaviours, administration records to understand the prevalence, incidence rates and future demands on healthcare. The integration with advanced biotechnology such as cell culture and molecular tools, has created a substantial volume of updated public health protocols, currently in use². For example, preventive measures to infectious diseases agents require knowledge on the molecular aspects of viruses, transmissions mechanisms, etc. For non-communicable diseases, histopathological knowledge provides operational guidance for diagnoses and therapies. Moreover, the integration of epidemiological, biological and social-behavioural aspects forms a key component for public health communications³. The emergence of mobile technology, as tested at scale through the current pandemic for both communicable and non-

communicable diseases^{4,5}, opens a new chapter to the public health domain – Digital Health. Here, we will share key digital health concepts, that have been used in China in to address some of the latest public health demands.

A first example is the use of a digital colour-coded system to replace traditional paper health declarations⁶. Traditional health declaration forms require individuals to fill in their personal information, with some questions to self-declare an individual's health status. These questionnaires were assessed manually at healthcare centres, a process that was often time-consuming, with high likelihood of erroneous information provided and/or assessed. The paper forms were then archived at a warehouse, using a manual index system. In response to the recent COVID-19 outbreak, and the limitations in travel, a digital health code system was developed⁶. The system has integrated the following components: identity verification used as the common reference point, residence and contacts information, while body temperature, basic travel history, nucleic test results and vaccination records can all be added to this central informational core by different locations where the individual is able to access services. Based on this information, the system will then generate a coloured QR code to identify if one person is healthy (and as a result can have unrestricted access to certain facilities or venues) or would need to engage further with healthcare services⁶. Such systems, when applied over a period of time, can also be used to stratify high-risk groups during public health emergencies, significantly reducing contact tracing times.

The emerging challenges to implementing such digital health systems, are the connectivity and disparities between different data infrastructures. Therefore, in the case of China, the National Health Commission published Notice 2020/No.22 to provide administrative support and guidance to local authorities about how these data should be added to the system, requested, shared and interpreted. This guidance has allowed for key parameters between different data infrastructures to be harmonized nationwide. Another limitation to the implementation of such digital health platforms, concerns those who have no access to digital devices e.g., elderly

populations, or those affected by lack of available infrastructure; as well as populations with low digital literacy⁷. Therefore, such a system must be accompanied by careful planning (in the case of infrastructure and digital education) and allow for grace periods while being integrated into routine healthcare systems.

We are expecting to see the rapid expansion of such applications in digital health globally, where calls for such frameworks will be considered within the local healthcare context as well as a potential link to international healthcare efforts⁸. To accommodate such demands, there will be a definite need to upgrade the capacity of healthcare facilities, adding yet another element to the list of competing priorities, especially in resource-restricted settings. In conclusion, to our experience an effective digital health implementation, such as the digital colour coded system, required harmonization between infrastructures, such as technology and data banks, a well-defined administrative guidance, solutions for the potentially under-served populations, and sustainable specifications for the growth of digital health infrastructure as part of routine healthcare services in the future.

References:

1. Davey Smith G. Post-Modern Epidemiology: When Methods Meet Matter. *Am J Epidemiol*. 2019 Aug 1;188(8):1410–9.
2. Smith GD. Epidemiology, epigenetics and the 'Gloomy Prospect': embracing randomness in population health research and practice. *Int J Epidemiol*. 2011 Jun 1;40(3):537–62.
3. Nishi A, Milner DA Jr, Giovannucci EL, Nishihara R, Tan AS, Kawachi I, et al. Integration of molecular pathology, epidemiology and social science for global precision medicine. *Expert Rev Mol Diagn*. 2015/12/04 ed. 2016;16(1):11–23.
4. Whitelaw S, Mamas MA, Topol E, Van Spall HGC. Applications of digital technology in COVID-19 pandemic planning and response. *Lancet Digit Health*. 2020/06/29 ed. 2020 Aug;2(8):e435–40.
5. Garg S, Williams NL, Ip A, Dicker AP. Clinical Integration of Digital Solutions in Health Care: An Overview of the Current Landscape of Digital Technologies in Cancer Care. *JCO Clin Cancer Inform*. 2018 Jun 29;(2):1–9.
6. Nakamoto I, Wang S, Guo Y, Zhuang W. A QR Code-Based Contact Tracing Framework for Sustainable Containment of COVID-19: Evaluation of an Approach to Assist the Return to

Normal Activity. *JMIR MHealth UHealth*. 2020 Sep 7;8(9):e22321–e22321.

7. Nguyen A, Mosadeghi S, Almario CV. Persistent digital divide in access to and use of the Internet as a resource for health information: Results from a California population-based study. *Int J Med Inf*. 2017 Jul 1;103:49–54.
8. Labrique A, Agarwal S, Tamrat T, Mehl G. WHO Digital Health Guidelines: a milestone for global health. *NPJ Digit Med*. 2020 Sep 18;3:120–120.

Letter published in Nature magazine



- **Open letter to international funders of science and development in Africa, published in Nature Medicine** by Ngozi A. Erondu, Ifeyinwa Aniebo, Catherine Kyobutungi, Janet Midega, Emelda Okiro & Fredros Okumo

This Letter to the Editor published in *Nature Medicine* is of particular importance and quite topical.

It refers to the recent announcement¹ of a US\$30 million grant awarded to the nonprofit health organization PATH by the US government's President's Malaria Initiative (PMI). The grant funded a consortium of seven institutions in the USA, the UK and Australia to support African countries in the improved use of data for decision-making in malaria control and elimination.

Not one African institution was named in the press release. Thus, the authors wrote the letter to the major international funders of science and development in Africa to address the funding structures that might perpetuate unequal power over knowledge and influence.

International funding, such as that of the PATH-led initiative, contribute a model of implementation that puts the delivery of several health interventions directly in the hands of non-local, non-governmental organizations, which further diminishes the capacities and ownership of national programs to

deliver to their populations and ultimately may lead to lack of sufficient local capacity.

On the other hand, the new 'high burden to high impact' initiative² from the World Health Organization recognizes the need for such vital work to be country-owned and country-led. Omitting African institutions from leadership roles ignores the agency these institutions have, their existing capacity, the value of their lived experience and their permanence and close proximity to policymakers.

Having said that, the New Partnerships Initiative from the US Agency for International Development (<https://www.usaid.gov/npj>) and the Alliance for Accelerating Excellence in Science in Africa (<https://www.aasciences.africa/aesa>) are good examples of equitable funding that can be further extended.

References:

1. PATH. <https://www.path.org/media-center/path-announces-pmi-inform-malaria-operational-research-project/> (10 February 2021).
2. World Health Organization & RBM Partnership to End Malaria. High burden to high impact: a targeted malaria response (WHO, 2019)

Funding opportunities



Multiple guides on getting started and planning your funding application. From getting started, budgets, methods, applying for fellowships etc.

Please follow this link for more information on how to apply for different funding:
<http://bit.ly/3dsCB3R>

Recent publications from our members



[Vodosin P, Jorgensen AK, Mendy M, Kozlakidis Z, Caboux E, Zawati MH. A Review of Regulatory Frameworks Governing Biobanking in the Low and Middle Income Member Countries of BCNet.](#)

[Votis K, Kozlakidis Z, Katsaounis P. CoronaBio: Using Crowdsourcing for Biomedical Research on COVID-19 to Manage a Pandemic.](#)

[O'Donoghue S, Byrne JA, Green C, Hill K, Kozlakidis Z, De Wilde A, Mullins P, Wiles KR. The Experts Speak on Biobank Education.](#)

[Abdelhafiz AS, Sultan EA, Ziady HH, Sayed DM, Khairy WA. Knowledge, perceptions and attitude of Egyptian physicians towards biobanking issues.](#)

[Abdelhafiz AS, Ho CWL, Voo TC. Recommendations for the development of Egyptian human biobanking ethical guidelines.](#)

[Amoako E, Jumbam DT, Bediako Y. Unseen and unheard: African children with cancer are consistently excluded from clinical trials.](#)

[Lhousni S, Belmokhtar KY, Belmokhtar I, Errahhali ME, Errahhali ME, Boulouiz R, Tajir M, Charif M, Zerrouki K, Benajiba N, Rkain M, Babakhouya, et al. Morocco's First Biobank: Establishment, Ethical Issues, Biomedical Research Opportunities, and Challenges.](#)

Prize for young scientists



The international Prize is awarded annually to four young scientists for outstanding life science research based on a doctoral degree earned in the previous two years.

The 2021 Categories

1. Cell and Molecular Biology
2. Genomics, Proteomics and Systems Biology Approaches
3. Ecology and Environment
4. Molecular Medicine

\$30,000 USD

The grand prize winner receives \$30,000 USD and each of the other three category winners receives \$10,000 USD.

Deadline: 15 July 2021

Entrants for the prize must have received their Ph.D. between January 1, 2019 and December 31, 2020

Science AAAS, Trust and Alice Wallenberg Foundation, SciLifeLab

➤ Science & SciLifeLab Prize for Young Scientists – celebrating excellent young researchers

To promote young scientists early in their careers, SciLifeLab and Science magazine/AAAS have joined forces in creating a global prize awarding the best PhD thesis work in life science. An essay based on the thesis is submitted to the editorial board of Science and four winners are selected each year.

As a winner, you will have your essay published by Science, receive up to 30,000 USD and be invited to Sweden where you receive your award, present your research and meet with leading scientists in your field. The award banquet is held in the Hall of Mirrors at Grand Hôtel, the original venue of the Nobel Prize.

Please follow the link for more information on how to apply: <http://bit.ly/youngsciprize>

IDDB
Innovations in Digital Health,
Diagnostics, and Biomarkers

This is a new journal with a strong focus on healthcare innovation; and innovations from/for LMIC settings are particularly welcome. Submitted manuscripts during these first years of the journal will bear no article processing charges.

Request for information



biobank^{uk}



university of
 groningen



umcg

UNIVERSITY OF
Southampton

➤ We are a group of social science researchers working for UKBiobank, the University of Southampton (UK) and the University of Groningen / University Medical Centre Groningen (NL). As part of our research, we are exploring and comparing different population/cohort biobank policies as they relate to:

1. how biobanks describe their relationships with commercial industries in their policies, as well as in the information they supply to participants and the public (e.g. data access policies, websites, participant information forms)
2. what policies, if any, does your biobank have with relation to its sustainability (including environmental sustainability e.g. the environmental impact of biobanks)?

We would very much appreciate it if different population/cohort biobanks could supply us with these documents. Or alternatively, direct us to where we can find the documents, or talk to us (English/Dutch) if they prefer. If you have any questions about our project, or are happy to send us the documents, please contact Dr Gabby Samuel on G.N.Samuel@soton.ac.uk

Upcoming events



In 2021 AORTIC will host its 13th International Conference on Cancer in Africa. Recognised as the most significant cancer conference in Africa, AORTIC attracts participants from around the continent and the world for information sharing, the presentation of new data, and the establishment of collaborations."

[Read more in English...](#)

En 2021, l'OAREC accueillera sa 13e Conférence internationale sur le cancer en Afrique. Reconnue comme le plus éminent rassemblement sur le cancer en Afrique, la conférence OAREC attire des participants de tout le continent et du monde entier à la recherche d'opportunités de partage d'informations, de présentation de nouvelles données et d'établissement de collaborations

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Usher Institute

CANCER AND PRIMARY CARE RESEARCH INTERNATIONAL NETWORK

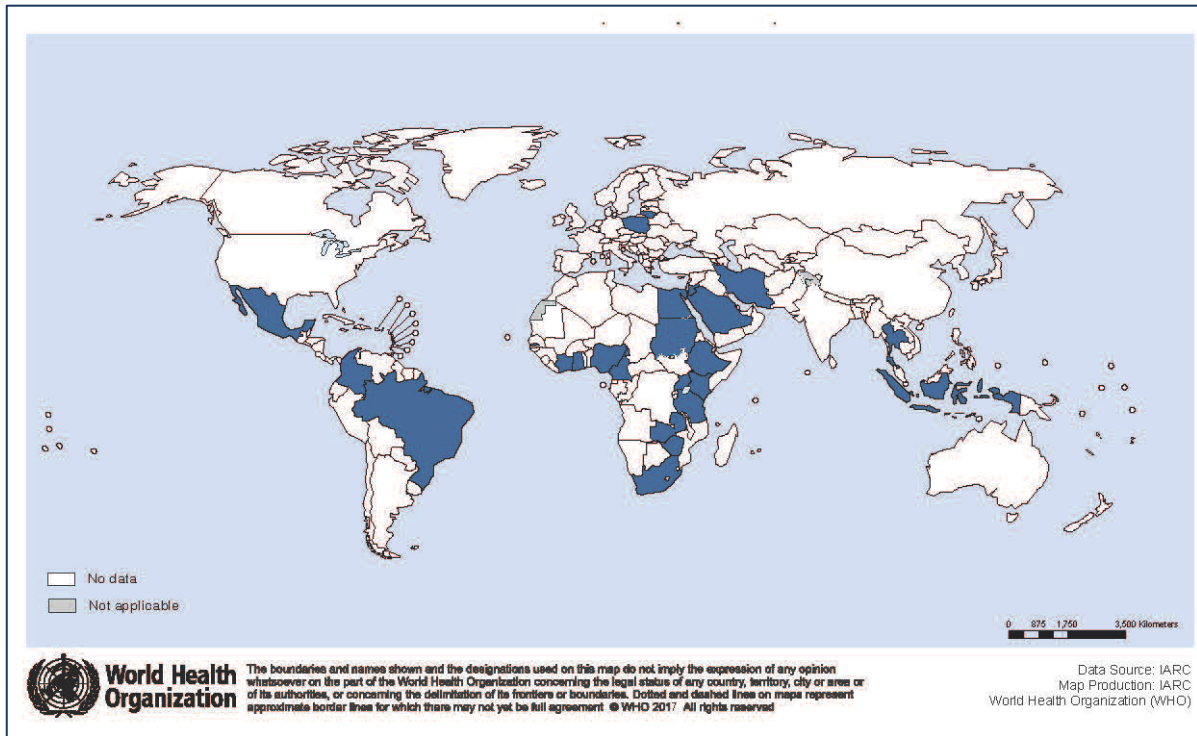
The Cancer & Primary Care Research Network. 13th Annual Conference will be held online on the 9th & 10th June 2021.

Registration is free for LMICs: [Click here to register](#)

Who Are We?

BCNet is the Low- and Middle-Income Countries (LMIC) Biobank and Cohort Building Network, which was established in 2013 to provide a platform for collaboration between its members, partners, IARC, and the international community. BCNet aims to support biobanking and cohort-building activities and to develop sustainable infrastructures for the management of high-quality biological samples and data for research, using best practice principles and guidelines.

BCNet Members



BRAZIL: Banco de Células do Rio de Janeiro; Barretos Cancer Hospital; Instituto do Câncer do Estado de São Paulo/Fundação Faculdade de Medicina; **CAMEROON:** Faculty of Medicine and Biomedical Sciences, Université de Yaoundé; Université des Montagnes; **COLOMBIA:** Clinica de la Costa Ltda; **CÔTE D'IVOIRE:** Institut Pasteur de Côte d'Ivoire; **EGYPT:** Children's Cancer Hospital Egypt – 57357; Faculty of Medicine, Cairo University; Integrated Biobank of Mansoura, School of Medicine, Mansoura University; Medical Research Institute, Ain Shams University; Medical Research Institute, Alexandria University; National Cancer Institute; National Liver Institute; Shifaa Al Orman Hospital, Luxor; South Egypt Cancer Institute, Assiut University; **ETHIOPIA:** Jigjiga University; **GHANA:** Breast Care International, University of Health and Allied Sciences; **INDONESIA:** Faculty of Medicine, Universitas Gadjah Mada; **IRAN:** Golestan Cancer Biobank; **JORDAN:** King Hussein Cancer Center Biobank; **KENYA:** Ampath Reference Laboratory; Maseno University; **LITHUANIA:** National Cancer Institute; **MEXICO:** Instituto Nacional de Cancerología; **NIGERIA:** College of Medicine, University of Ibadan, Obafemi Awolowo University Teaching Hospitals Complex; **POLAND:** Biobank Lab, Department of Molecular Biophysics, University of Lodz, Wrocław Research Centre EIT+ Biobank; **SOUTH AFRICA:** National Health Laboratory Service (NHLS), NHLS/Stellenbosch University Biobank; **SUDAN:** Institute of Endemic Diseases (IEND), University of Khartoum; Radio-Isotope Centre Khartoum; **THAILAND:** National Cancer Institute; **THE GAMBIA:** Medical Research Council (MRC) The Gambia Unit, MRC International Nutrition Group; **UGANDA:** Makerere University College of Health Sciences; **UNITED REPUBLIC OF TANZANIA:** Kilimanjaro Clinical Research Institute; **ZAMBIA:** Centre for Infectious Disease Research in Zambia; **ZIMBABWE:** African Institute of Biomedical Science & Technology; University of Zimbabwe College of Health Sciences.

BCNet Partners



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