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South Asia Genomic Healthcare Alliance (SAGHA)

Amongst the key projects of the Genomic Medicine Foundation UK (GMF-UK), the UK India Genomic Medicine Alliance (UKIGMA) has been one of the most popular initiatives of GMF-UK. It was set out with the aim of promoting and implementing the genomic applications in medicine and healthcare in India and neighboring regions through collaboration and partnership with clinical and academic institutions and organizations across the whole South Asia. Apart from the UK, many genomic professionals and scientists from other nations have also contributed. In view of the current vastly expanded collaborations, this alliance is now known as the South Asia Genomic Healthcare Alliance (SAGHA) effective 1st January 2024.

The SAGHA has many objectives as shown in the Table-1:

Table-1: Objectives of the South Asia Genomic healthcare Alliance

- Identify and recruit organisations and institutions engaged in scientific and applied research in genomics relevant to medicine and healthcare.
- Encourage collaboration with individual clinicians, scientists, and other professionals in population genetics, ethical & social issues and health economics.
- Develop a programme for training and skills development through series of structured courses, workshops and webinars in the key areas of applied and translational genomic medicine.
- Identify and develop partnerships to steer the multi-disciplinary specialist genomic healthcare with the sole objective of integration with the mainstream medical practice.

- Plan and carry out specific audit on the quality and outcomes of investments in Institutions and Laboratories as part of the current strategy for capital and infrastructure scientific developments.
- Develop and steer through individual or group research and innovations projects on related to utilization and the delivery of genomics led medical and healthcare, particularly in therapeutic interventions and new drug and devices development.

Collaborators and partners of the SAGHA have identified and agreed to work in several diverse fields relevant to the South Asia (Table-2):

Table-2: Fields of Interest to the UK India Genomic Alliance

- Genetic and Genomic Education
- Birth defects (Congenital Anomalies)
- Rare developmental disorders
- Cancer genetics and genomics
- Cardiovascular genetics and genomics
- Pharmacogenomics
- Genomic and Precision & Personalised Medicine
- Ethical, Legal & Social Issues

Many institutions, hospitals and independent organizations in the region (Figure-1) are committed to work together and deliver many projects (Table-3).

Table-3: Current projects of the SAGHA

- Indo-UK Genetic Education Forum
- Biennial South Asia Birth Defects Conference
- Indian cancer genetics interest group
- South Asia cardiovascular genomics consortium
- Decipher India (South Asia) consortium
- South Asia Pharmacogenomics Consortium
- South Asia Genome Ethics consortium

JAMMU- JAMMU & KASHMIR
AMRITSAR- PUNJAB
CHANDIGARH (UNION TERRITORY)
NEW DELHI- DELHI
DEHRADUN- UTTARAKHAND
LUCKNOW- UTTAR PRADESH
JODHPUR- RAJASTHAN
GWAUHATI- ASSAM
DIBRUGARH- ASSAM
MUMBAI- MAHARASHTRA
HYDERABAD- TEALNGANA
BANGALORE-KARNATAKA
MANIPAL-KARNATAKA
MYSORE-KARNATAKA
KOCHI- KERALA
CHENNAI- TAMIL NADU
VELLORE- TAMIL NADU
COLOMBO- SRI LANKA

Figure-1: SAGHA collaborators & partners across the South Asian subcontinent



In view of rapidly growing genomics awareness and interests across the entire South Asian region (Figure 2), the scope and remit of the UKIGMA is expanded to the entire South Asia. This is considered more relevant and well timed given the role and importance of genomics during and after the Covid-19 pandemic. Large majority of the South Asian inhabitants are aware of the importance of RT-PCR genome testing and the prevention offered by the mRNA vaccines (Pfizer and Moderna). In addition, parents and patients acknowledge the power of precision genomic diagnosis and specific treatment for rare genetic diseases, cancers, heart diseases and many other systemic diseases.



Figure-2: The current political map of the South Asia region; the South Asia includes Afghanistan, Pakistan, India, Nepal, Bhutan, Bangladesh and Sri Lanka (shown in red).

The new expanded UKIGMA includes neighboring nations (Figure-2). In the northwest sector, the scope and remit are broadened with the inclusion of Afghanistan and Pakistan. In the northeast, Nepal, Bhutan, Bangladesh and possibly Myanmar are included. It is anticipated that in future other nations from the Western Asia and the Southeast Asia might also be included. All these Low and Middle Income Countries (LMICs) have very basic infrastructure and healthcare facilities to cater diverse and distinct ethnic peoples. Work has already commenced by setting up the northwest and northeast genomics consortia. Initial response is overwhelmingly positive and very encouraging. However, major challenges and hurdles are likely due to inevitable intra-regional political and socio-economic variations.

The current projects are included in the newly structured SAGHA. In addition, the work has commended for developing a multi-author edited book (Editors-Dhavendra Kumar & Kumarsamy Thangaraj), the '**Medical and Health Genomics of South Asia**' commissioned by Elsevier, the leading life sciences publisher.

Advisory Council of the South Asia Genomics Alliance

Professor Dhavendra Kumar, The Genomic Medicine Foundation UK (Chair)

Professor Amarjit Bhanwer, Chair- North West India Genomics Consortium

Prof. Madhulika Kabra, Delhi & NCR Region

Prof. Amita Pandey, UP & Central India

Dr. Kumarsamy Thangaraj, Telangana & South India

Dr. Saswati Mukhoupadhyaya, West Bengal & South East India

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Dr. Nilam Thakur, Nepal Clinical Genomics Centre, Kathmandu, Nepal

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The alliance is very keen and open to include collaborators from Afghanistan, Pakistan, Bangladesh, Myanmar and the South East Asia.

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