TGHN Diagnostic evaluation and testing Working Group 1st meeting

COVID Hub - Minutes

Date: 12/06/20
Location: Zoom

Introduction

The ongoing establishment of 'COVID-19 working Groups' is addressing the discussion and consensus building around identified research gaps across low resource settings. All attendees of 'open workshops' have been invited to participate by completing a survey and expressing their interest in the 'COVID-19 working Groups'. The purpose of these groups is leading to the creation of communities of practice.

On 12th June, The Global Health Network supported the first virtual meeting for the 'Diagnostic Evaluation and Testing' Working Group.

The meeting was organised in response to questions raised in COVID HUB workshop which highlighted the need for greater discussion of the challenges, options and ethics of COVID-19 diagnostic development.

The purpose of this meeting is that teams can be formed from across the globe to share ideas, gather consensus, form collaborations and seek funding. These groups can share and engage widely to support rapid research implementation during this pandemic. We can fully support the operations of these groups and so your precious time can be spent on these key discussions

What diagnostics are already available for COVID-19, what are their limitations and are their diagnostic tests in development?
What do we need to consider when developing new diagnostics? What are the considerations particularly pertinent to COVID-19 and the pandemic situation?

*Some **key questions** that could be address include:*

a. *What are the barriers to point-of care diagnostics in the community?*
b. *What studies are being undertaken with regards to sample collection?*
c. *What risk of transmission is involved in sample collection?*
d. *What is known about current assay sensitivities?*
e. *How does testing capacity vary regionally and internationally?*
f. *What are the considerations surrounding ethics and consent of testing?*
g. *Are community engagement activities underway to encourage testing and build trust?*

Attendees

Over 50 people registered to be members of this WG and 28 attended the first team meeting from 16 different countries as shown in the following map:

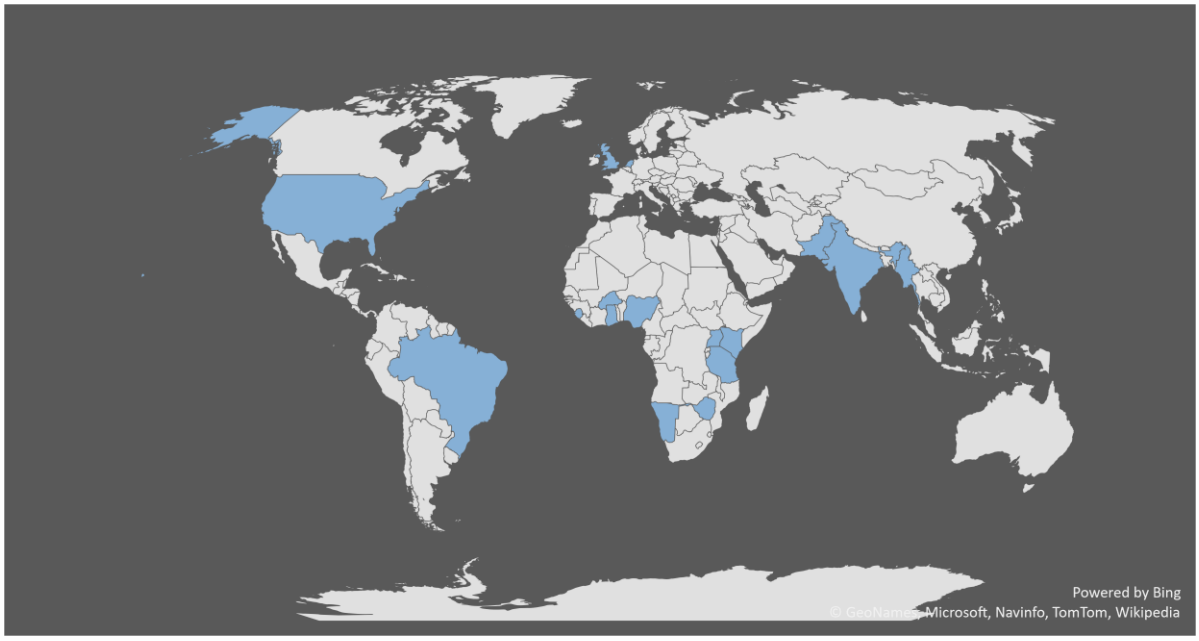

Fig 1. Location of the attendees of the Diagnostics WG 1st meetings.

TGHN team	Trudie Lang, Davide Balardi, Ryan Walker, Jamie Parker, Nicole Feune de Colombi, Welile Sikhondze, Luiza Lourenco
Those who spoke	Dr. AbdulAzeez A. Anjorin Oscar Tapera Steve Wandiga Vasundhara Rangaswamy Haleema Sadia Evelyn Ansah Tin Maung Hlaing
	Abebe Sorsa Abel Abbas Kelvin Thiongo
Rest of Attendees	Olufemi Samuel Azuka Ike Fatima Hameed Farkhanda Ghafoor Adesola Olalekan Liã Bárbara Arruda Belinda Achieng Nébié Ouedraogo Rashid Ansumana Vito Baraka Sophia Khalayi Abdulwahab Sessolo Tresia Amugamapeni Watyapuwo Catherine Mkindi

Summary of comments

3 main themes emerged from the thematic analysis highlighting research priorities within the COVID-19 Diagnostics Open Working Group 1st meeting (Fig. 2.).

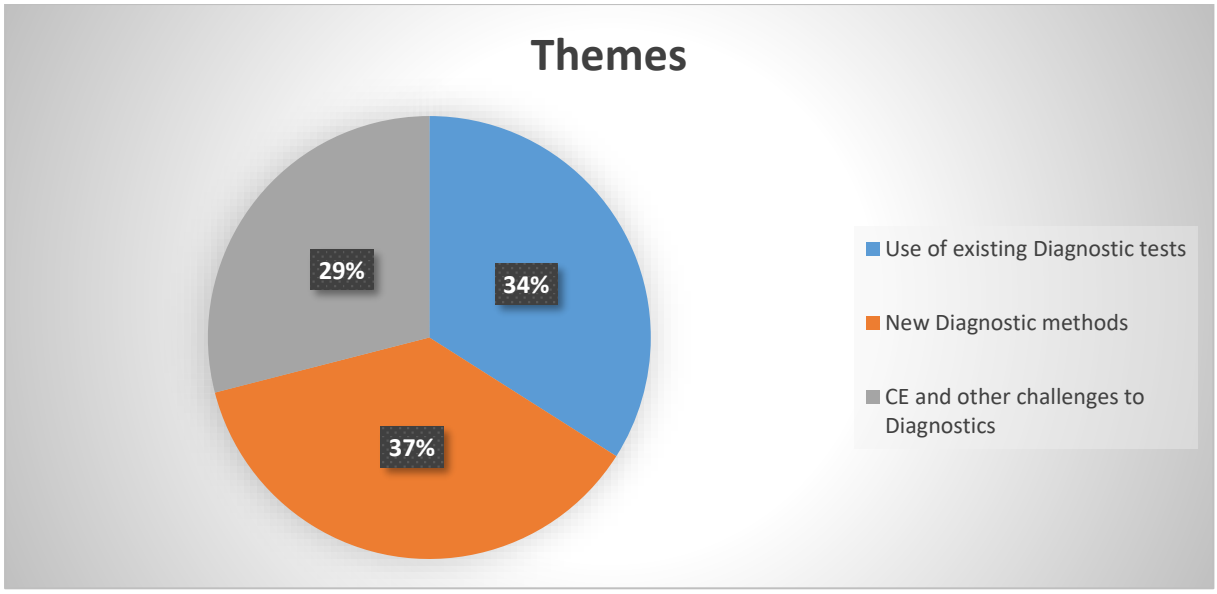

Fig 2. Three main themes from the first meeting of the diagnostics working group were identified

Within these topics it was then possible to categorise the questions, comments, and discussions to further specific areas (Fig. 3.).

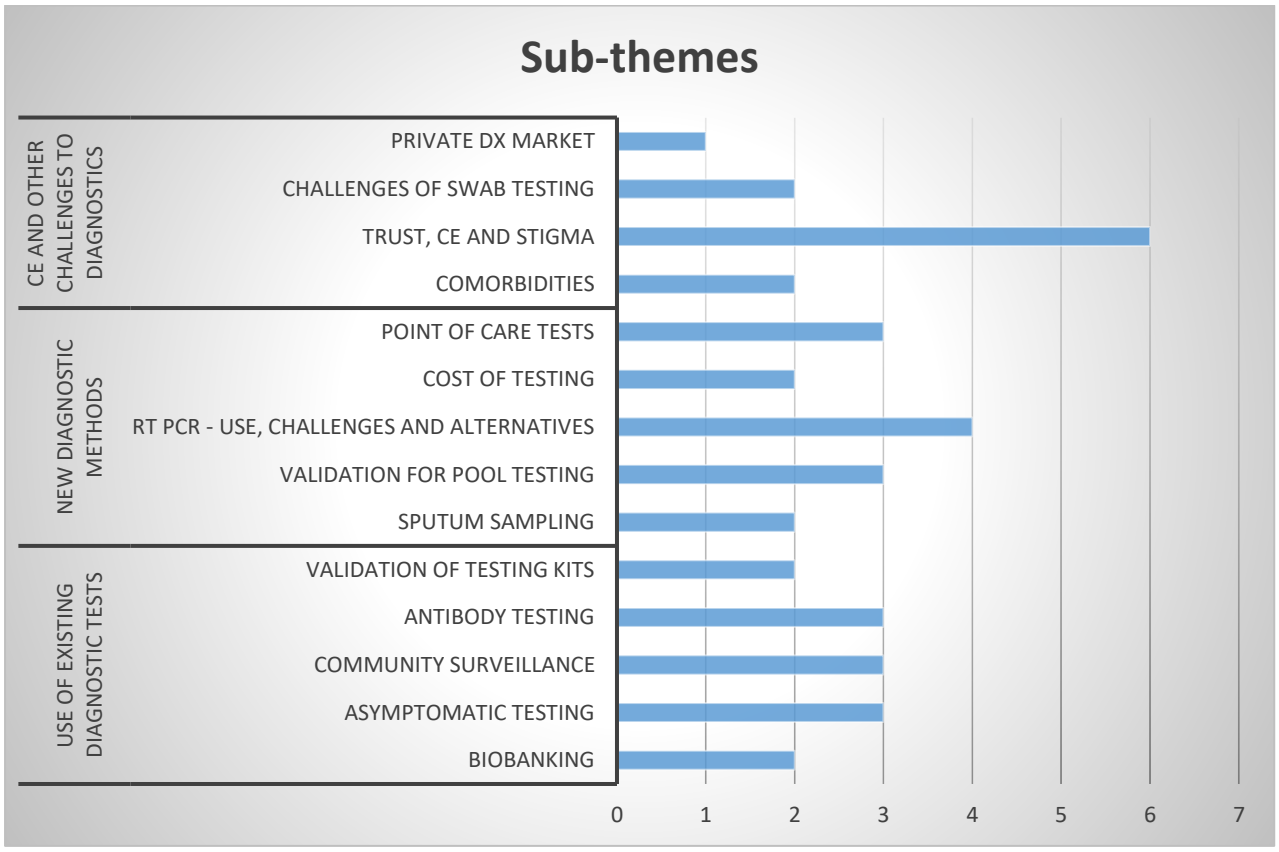

Fig 3. Categorisation of questions, comments and discussions to specific areas

Reviewing the discussion, comments and question we consider the following questions emerged as the priority research questions, concerns and knowledge gaps.

Are there cheaper, easier current testing methods which could be looked into and developed further?

Members of this working group highlighted various challenges faced by diagnostic teams in different regions of the globe. The cost and skilled nature of RT PCR testing was emphasised: laboratories need to have expensive equipment and skilled workers with experience and knowledge of unilateral flow, contamination etc which are required to use the equipment correctly. In LMICs in particular, this impacts the scalability of diagnostic capacity and therefore various different techniques were discussed. The safety of the field teams carrying out the diagnostic tests was also mentioned – the currently used swab method is thought to be high risk to those carrying it out, especially in settings in which availability of PPE is limited.

Sputum sampling as used in TB diagnosis was suggested as a potential alternative to swab testing as it is easier to do and poses less of a risk to the diagnostic team. Test pooling was also mentioned: in Ghana samples are tested in batches of 10 - samples are only tested individually if the batch returns a positive result. While this has been effective in Ghana another member pointed out that if prevalence of the disease supersedes 5% then test pooling is no longer cost effective. Sample pooling is extremely innovative.

One member discussed the LAMP (Loop Mediated Isothermal Amplification) method his team were developing, using recombinant polymerase proliferation, which could be used in less sophisticated labs with fewer available resources. The team has received a small grant to develop the fluorescent assay for this test and will test its accuracy and specificity against RT-PCR; they are currently awaiting ethical approval, but they were happy to share their protocol.

What are the challenges being faced concerning testing in different LMICs in healthcare settings?

Attendees discussed various challenges faced by diagnostic teams in healthcare settings – hospitals, clinics, laboratories – in LMICs. One member of the group discussed the high numbers of patients in Ethiopia seeking healthcare for non-COVID symptoms, who are then testing positive for COVID during post-mortem evaluation and how this is helping to track the spread of the disease. Another attendee then pointed out that this was not feasible in all countries for cultural reasons.

In India it was relayed that some health centres are reluctant to test for COVID as they are worried they'll be forced to temporarily shut down. '*In some places due to lack of staff, lack of collection kits, backlog of testing, fear of closing down of health centre (can you believe that!), people are refused testing*.' Similarly, there may be a compromise reached by private diagnostic companies between making a profit and upholding good testing standards - due to the cap on the price of tests it is a worry that some private diagnostic companies will skip costly fumigation/sanitization methods and may therefore provide a less reliable/accurate service than advertised/expected. '*How many for-profit testing centres will go to the trouble of fumigating and decontaminating?'*

As many COVID testing centres are repurposed from those testing for other diseases, concern that these other diseases must not be ignored or forgotten was voiced. *'we know very well that this will create some tension as TB testing etc needs to continue too.'* The effects of the response to COVID on the management and prevalence on other endemic diseases has been identified as a priority in previous WG's and in TGHN's survey.

What are the challenges being faced concerning community testing in different LMICs?

Further to diagnostic challenges in healthcare settings, barriers to community testing were also mentioned by several members. The importance of community surveillance of the virus has been

emphasised in many previous Working Groups and was also spoken of in this meeting. '*here in Ethiopia we are planning to conduct serologic surveillance at the community level*'.

As has also been mentioned in many of the Working Groups, there is still lots of mistrust of and stigma towards healthcare workers, and even disbelief of the existence of the virus in some communities. This can make it hard to test suspected COVID-positive individuals, especially when the diagnostic techniques are invasive such as the swab method used for COVID diagnosis and when trying to identify asymptomatic patients. As has been emphasised in previous Groups, CE and public health messaging must occur alongside biomedical interventions such as testing, treatment and trials.

Risk to the health care workers conducting the testing was also identified as a concern. '*My concern is on the risk involved in sample collection'*

What other measures could be taken to enhance COVID diagnosis?

The importance in biobanking for long-term analysis of viral mutation was touched upon by one attendee, again a topic which has been discussed among previous groups.

Development of quick, cheap point of care tests was agreed to be an important research priority. '*A point of care test at the community level which is accepted by the community is a major research gap*'

Testing of asymptomatic volunteers, particularly in the community, was mentioned by many members as being important in both understanding and monitoring the spread of the disease and also aiding disease characterisation research. '*Identification and testing of asymptomatic patients are important and often overlooked concerns – what is the role of antibody testing in terms of identifying asymptomatic individuals*?'

Call to action and next steps

Following this first meeting, there was an agreement in the need for a platform (for which TGHN will be providing – details to come) where members of the team will be able to post information on funding calls, specific resource and tool a well as a forum chat for members to form new collaborations and plan future work.

Diagnostic studies are critical right now! Suggested starting points from this first call are as follows:

1- **Strong call across all WG's to do surveillance work on comorbidities and coinfections. Any shared protocols etc would be fabulous to help others in less resourceful contexts. Maybe the creation of a core protocol for testing?**

2- **Sharing a position paper with developers may be very useful. There is a potential to influence their research priorities.**

3- **Examine the potential roles of test pooling, sputum sampling and LAMP tests in diagnosis of COVID**

'If you are involved in Diagnostics R&D, please get in touch and share any relevant protocols, associated tools and your experience. If you have not joined this group yet, you can get in touch here info@theglobalhealthnetwork.org' or complete the survey here.