Advancing Shared Goals:

Global Health Clinical Consortium Impact Report 2023

GHCC
Global Health
Clinical Consortium

Table of Contents

About the GHCC

Even under the best circumstances, conducting robust, high-quality clinical trials can pose considerable scientific, financial, and logistical challenges. For those working on diseases that can affect the world's most vulnerable people, such as TB, malaria, and HIV, these customary hurdles come with additional complexities. Researchers and organizations working in resource-limited settings and with underserved populations often must develop relationships with new and sometimes untested manufacturing partners, navigate unstable political environments, and contend with problems ranging from inadequate facilities and equipment to electricity, hygiene, and connectivity issues.

Launched in 2009, the Global Health Clinical Consortium (GHCC) brings together leaders from several research organizations that focus on diseases that affect vulnerable populations in low- and middle-income countries (LMICs) to help mitigate these obstacles, catalyze more top-flight clinical trials, and leverage the power and possibilities that arise from joint effort. The eight Product Development Partners (PDPs) that today comprise the GHCC are currently conducting more than 72 ongoing and planned trials to develop vaccines, microbicides, preventatives, therapeutic products, and diagnostics for more than 17 disease areas at nearly 422 clinical research sites.

By providing a forum for collaboration, a platform to pool resources and expertise, and a vehicle for joint action, GHCC augments these critical research efforts in several ways. These include improving the performance of clinical trials through workforce training opportunities, building a community of practice among PDPs by sharing providers, knowledge, and insights; and innovating technological tools that help overcome obstacles and accelerate research. These collective efforts have helped undergird several significant accomplishments by the PDPs over the past decade and brought many top scientists and public health researchers together in critical coalition against shared challenges. The consortium's work has proved especially vital during the experience of the COVID-19 pandemic, which has made it even harder to conduct clinical trials safely and effectively given the exigencies of lockdowns.

PDP List:

DNDI – Drugs for Neglected Diseases Initiative

FIND – The global alliance for diagnostics

IAVI – IAVI

IPM – International Partnership for Microbicides

IVI – International Vaccine Institute

MMV – Medicines for Malaria Venture

PATH – PATH

TBA – TB Alliance

The GHCC focuses on collaborations in LMICs, defined as countries with a gross national income (GNI) per capita under $13,205 a year.

[1]Middle Income Countries Overview: Development news, research, data | World Bank

Objectives

1

Achieve continuous, targeted improvements in speed, quality, and cost of clinical development

2

Understand and leverage collective capabilities and expertise to share and follow best practices

3

Enhance innovation, communication, partnership, and coordination among PDPs and streamline interactions with key partners

Organization and Management

GHCC Leadership Team (LT)
The LT consists of seven leaders from across the PDP organizations who provide strategic input, endorse proposed initiatives, and coordinate with the GHCC working groups. They work in concert with a dedicated Bill & Melinda Gates Foundation (BMGF) Program Officer, who also provides essential project management.

GHCC Working Groups (WG)
Include a cross-section of PDP and Preferred Provider representatives. A lead is identified for each WG to assist with guidance and direction. Timelines, outputs, and deliverables are determined by the PDPs and Preferred Providers at the annual convening. The working groups meet periodically via teleconference throughout the year to refine and address these objectives.

GHCC Alliance Managers
One individual from each PDP and Preferred Provider organization is responsible for partnership management across the network. These individuals serve as the primary point of contact for both informal and formal discussions as needed throughout the year and during the Annual Performance Evaluations and Debrief sessions.

Full GHCC Membership
Each PDP and Preferred Provider is represented on joint quarterly "All Clinical" calls to receive updates from the GHCC WGs, LT and guest participants. The GHCC convenes annually.

Mission Purpose
The GHCC is charged with leading the thinking on collaboration opportunities among PDP members, gathering input from stakeholders, and proposing recommendations to realize increased impact through joint effort.

Among the Recent Achievements by GHCC Member PDPs:

PATH, working with the Serum Institute of India, developed a new, affordable, and locally-approved pneumococcal vaccine. In 2020, the novel oral polio vaccine against type 2, for which PATH coordinated development efforts, became the first vaccine to receive a WHO Emergency Use Listing (EUL) for use in outbreak and other high-risk settings. In 2021, the world's first malaria vaccine, RTS,S/AS01, received a recommendation from WHO for use to combat P. falciparum malaria in young children living in areas of moderate to high malaria transmission, and in 2022, the vaccine was prequalified. PATH has worked, in partnership, on the development and introduction of this vaccine for more than 20 years.

Medicines for Malaria Venture (MMV), working with GSK, saw approval of the first new treatment for Plasmodium vivax malaria in over 60 years.

The Drugs for Neglected Disease Initiative (DNDI) developed the first all-oral treatment for sleeping sickness that works for all stages of the disease.

TB Alliance manages the world's largest portfolio of novel TB drugs and regimens, with approximately 30 projects in active development. TB Alliance has developed pretomanid, which has been approved by more than 20 regulatory agencies as part of the "BPaL regimen" to treat adults with drug-resistant pulmonary tuberculosis. Scaling up access to this novel regimen is ongoing.

The M72 TB vaccine candidate showed promise in a phase IIb trial conducted by GSK and IAVI, and is now continuing to be developed by the Gates MRI.

The dapivirine vaginal ring developed by the International Partnership of Microbicides (IPM) has been recommended for HIV prevention by WHO.

FIND worked with ACT-Accelerator diagnostics partners to expand the use of next-generation sequencing for genomic surveillance in multiple countries, which enabled the early detection of SARS-CoV-2 variants, including the initial Omicron variant in Botswana.

Where We Work

Geographic regions and number of participants
for ongoing and planned studies

Number of participants

20

7000

Number of studies

1

5

10
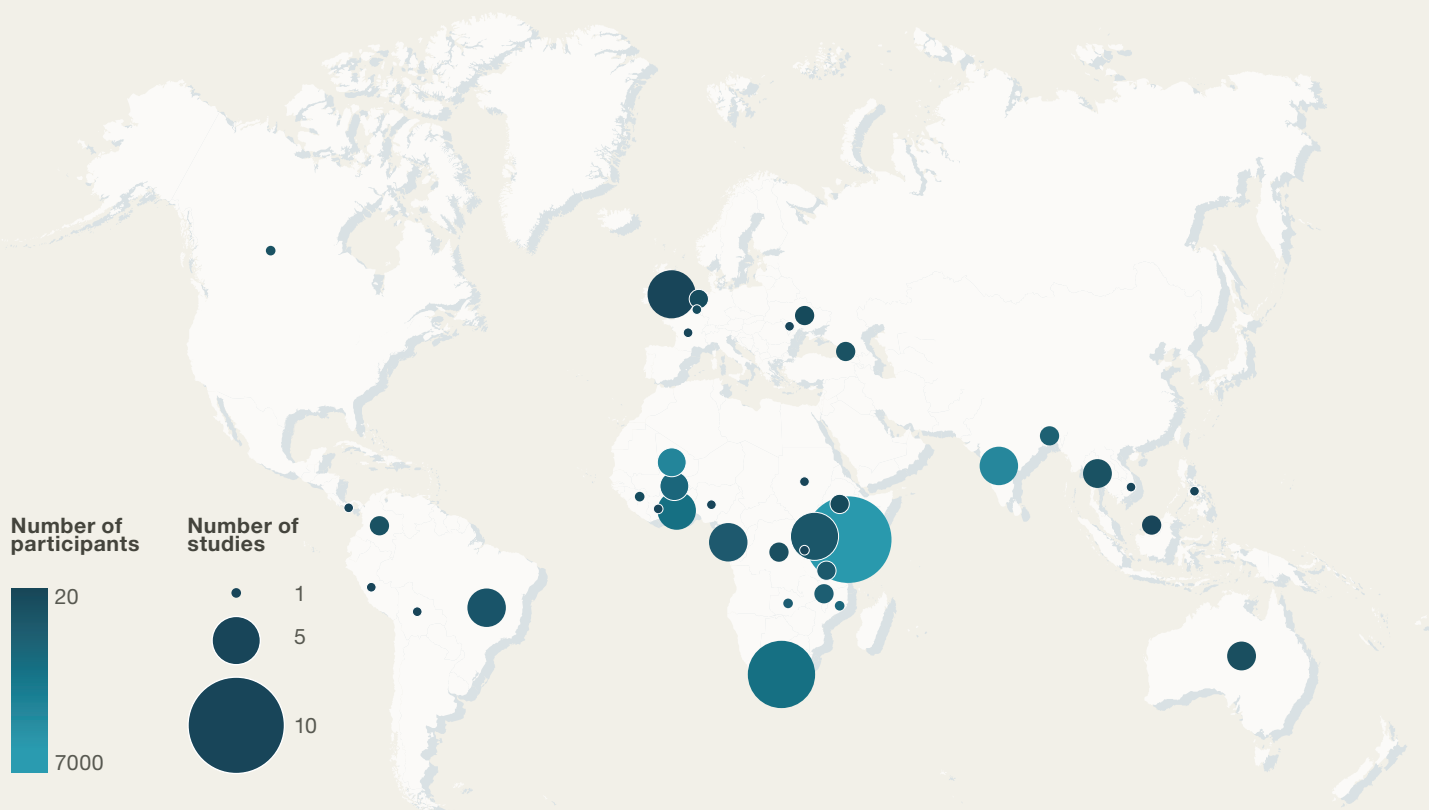
**Countries with highest
number of studies:**
Kenya (9), South Africa (7),
Uganda (5), United Kingdom (5),
India (4)

**Countries with highest
number of participants:**
Kenya (6,592), India (4,610),
Mali (4,229), Ghana (3,312),
South Africa (3,102)

Improving Clinical Trials

Conducting safe and effective clinical trials requires considerable expertise and training that can sometimes be hard to come by in resource-limited settings. That's why, over the years, the GHCC has worked with local leaders and organizations to develop online and intensive training modules that encourage best practices with an eye to resource limitations, and to help scientists and researchers in LMICs improve the knowledge and performance of local and regional scientific workforces.

Good Clinical Laboratory Practice

Background

A decade ago, the GHCC's member organizations were each expending significant resources to deliver Good Clinical Laboratory Practice (GCLP) training to over 300 sites and laboratories in resource-limited settings. To reduce costs and redundancies, expand global reach, and standardize GCLP content delivery across countries, the GHCC's Shared Training WG began investing in the development of online training modules in 2014 to cover critical information in an easy-to-access way.

User location

52%	15%	4%	12%	6%	1%
Africa	Asia	Europe	North America	South/ Central America	Oceania
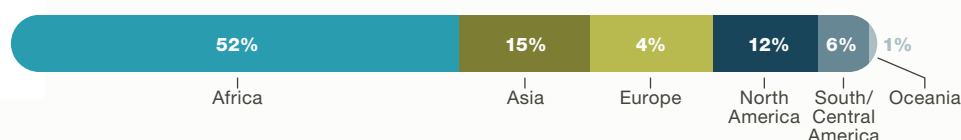
Over the course of five years, in partnership with The Global Health Network (TGHN), the GHCC created an extensive, seven module, peer-reviewed online training course that covers the application of each GCLP principle. The course – available on TGHN's digital learning platform, which provides free access to information, training, and network opportunities for clinical sites and laboratories – has been highly valued worldwide, particularly in LMICs. It has removed a barrier to access for scientists, medical professionals, and researchers in resource-limited areas and made it easier for everyone to learn the key practices and principles of GCLP for application in clinical trials.

Global Impact

Worldwide interest in the course has exceeded expectations, particularly in LMICs. Module 1 has been translated into French, Portuguese, and Spanish, and the full training course was translated into Russian in 2021.

Visit TGHN website

During the COVID-19 pandemic, open-access online training platforms became a crucial resource to maintain the rigorous standards of compliance and practice for laboratories contributing data to clinical trials.

Results

35,033
eLearners

132,085
modules completed

63,164
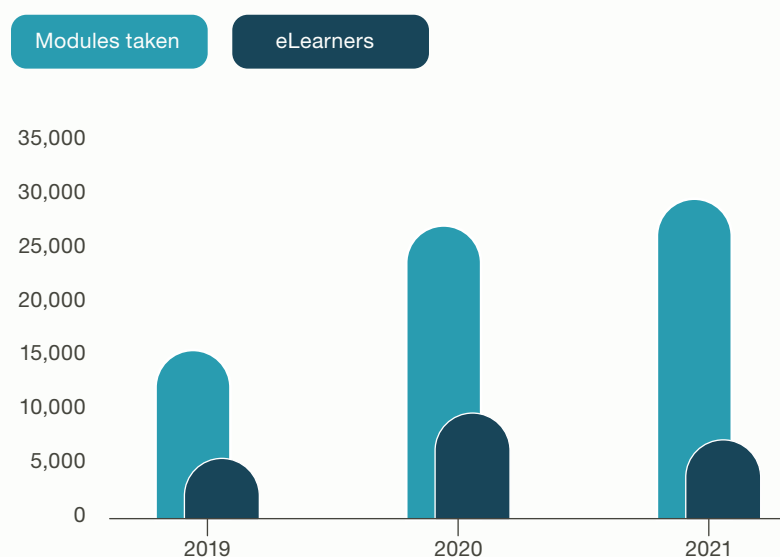training certificates
awarded

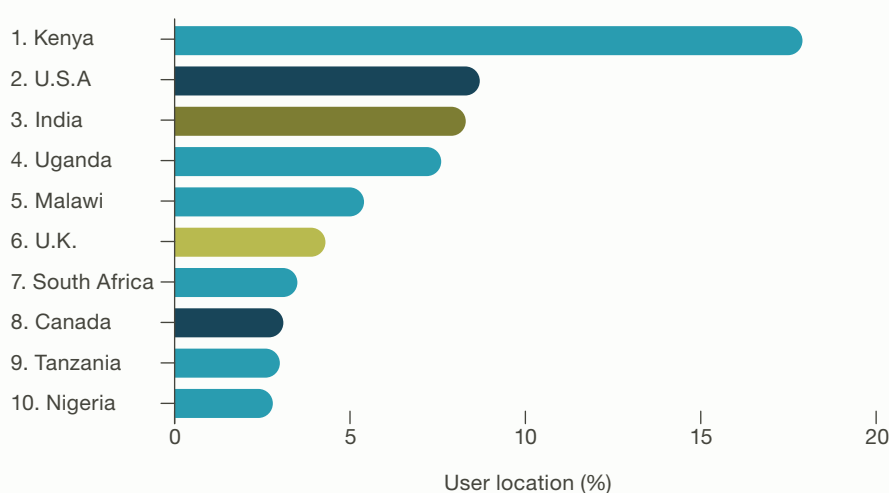**341,000**
views of course
landing page

3.68
pages/session

17:17
avg session
duration

Increased course uptake from 2019–2021

Modules taken   eLearners

Top 10 countries

User location (%)

Course Development
The GCLP eLearning Working Group, comprised of technical experts and non-technical reviewers from the PDPs under the leadership of TGHN, created an extensive peer-reviewed training course with seven GCLP training modules (2015-2020).

Clinical Research Relevance
Application of the GCLP training course ensures the reliability, quality, consistency, and integrity of data generated by clinical trial laboratories, which is crucial to research outcomes.
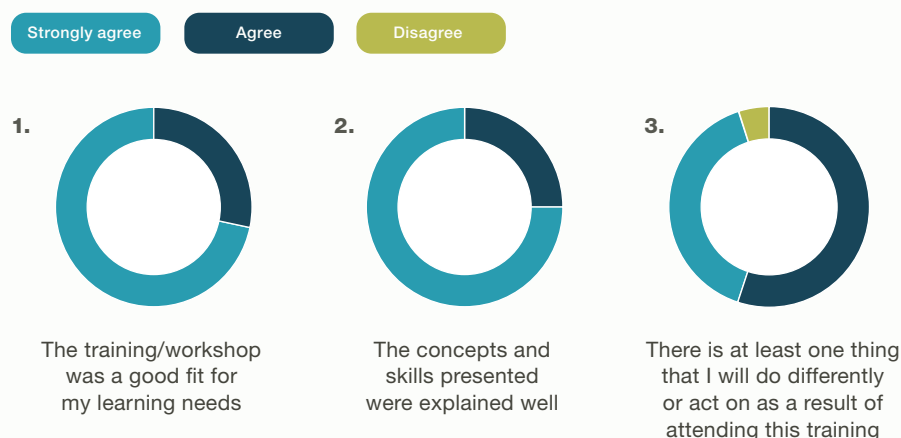
Accessibility
The GCLP digital training center uses low-bandwidth settings, allowing users to access content in resource-limited environments.

More than half of GCLP module takers hailed from Africa. The training has proven particularly popular in Kenya, which accounts for nearly 1 in 5 eLearners (17.9%), twice the number of any other country.

Future Plans

The GCLP eLearning WG plans to update the training course as new information is released, in collaboration with partners and funders. Course modules will be translated into additional languages to serve a wider audience, with a focus on LMICs.

eLearner feedback

Strongly agree   **Agree**   **Disagree**

1.

The training/workshop was a good fit for my learning needs

2.

The concepts and skills presented were explained well

3.

There is at least one thing that I will do differently or act on as a result of attending this training

88.7% of eLearners said they would do at least one thing differently after taking the GCLP training

Shared Study Coordinator Training

Background

Going beyond Good Clinical Practices (GCP), the Clinical Operations for Study Coordinators course was developed to equip study coordinators with the resources and network to fully realize the scope of their essential role in building and maintaining successful research centers.

Building on the success of the shared GCP and GCLP trainings in LMICs, representatives from the PDPs and alumni of the World Health Organization (WHO) TDR Clinical Research and Development Fellowship, supported by experts from FCD College (FCD), created a blended training curriculum grounded in LMIC-specific context.

The blended training course – launched in Africa in 2017 and expanded to Asia in 2018 and 2019 – includes interactive online sessions completed over a 10-week period. This approach leveraged the cost and convenience advantages of remote, supported learning; ensured sufficient topic depth; and offered a reasonable time commitment.

While the 10-module, 80-participant course is intended for, and primarily used by researchers in low-income countries, a public version has also been widely accessed by many others, including academic institutions in Nigeria, Benin, Sudan, Tanzania, and Kenya; industry (including Pfizer, Novartis, Genzyme, GSK, Merck, Bayer, and Amgen), and governmental bodies in Botswana, Rwanda, and Tajikistan.

Learner's assessment of the overall course

1 2 3 4 5

◄ LEAST POSITIVE ——— MOST POSITIVE ►

Relevance of the course to your current job

Interaction with tutors during the course

Tutors subject matter expertise

Tutors performance during tutorials

Timing of assessment

Access to content

Clarity of content

Course structure

I have actively participated in the course

I was highly motivated to learn the content of this course

I have developed valuable expertise/ skills during the course

How would you rate this course overall content

"

The course has been critical for my own professional development. In addition, I feel more confident and well equipped with the required knowledge and resources, to take on the responsibility of training my site study staff and other team members.

– Principal Investigator
India

Overall I can say without a doubt that this class has been one of the most useful and most interesting classes I have ever taken.

– Study Coordinator,
Gabon

Having an opportunity to be involved in the study coordinators course has been life changing for my career.

– Study Coordinator/Nurse
South Africa

My confidence in my ability to lead the site team has also been greatly boosted. This has reflected positively in my relationship with the field coordinators, and field staff I work closely with.
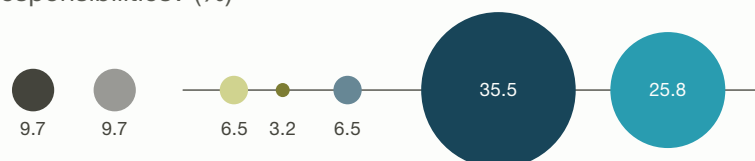
– Research Clinician,
Gambia

"
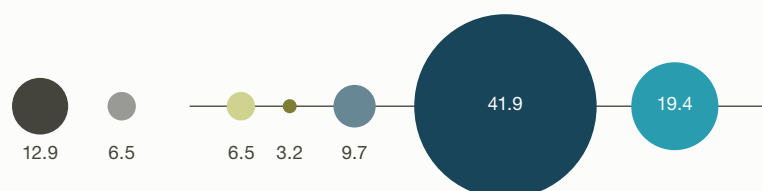
Results

**GHCC PDPs feedback on the course participants' performance**

| N/A | Don't know | 1 | 2 | 3 | 4 | 5 |

◄LEAST POSITIVE——MOST POSITIVE►

Is this participant able to take on increased research responsibilities? (%)

9.7　9.7　6.5　3.2　6.5　35.5　25.8

Is this participant better able to collaborate with the sponsor (or your PDP, if you are representing the sponsor)? (%)

12.9　6.5　6.5　3.2　9.7　41.9　19.4

Is this participant better able to manage (or help the PI manage) the study team? (%)

9.7　12.9　6.5　3.2　12.9　38.7　16.1
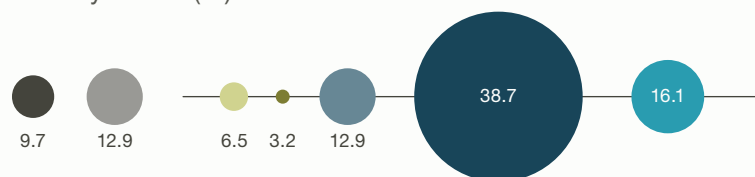
Open Access

A free, self-guided version of the training course was published for global audiences on the FCD website.

8,940 users have visited the course as of October 2021, with the majority working in LMICs.

Visit the FCD website

Regional Leadership

In 2021, course content, delivery, and leadership were successfully transferred to CDT-Africa, a regional Center of Excellence based at Addis Ababa University in Ethiopia, following a competitive bid process.

Visit CDT-Africa website　(log in as a guest)

Future Plans

As CDT-Africa takes over leading the course, members of the GHCC training working group will continue to assist by supporting independent review and objective scoring of applicant submissions, as well as monitoring and evaluation. High-quality, locally-led training like this one offered by CDT-Africa, with support from PDPs and an extended group of collaborators, can be an exemplar of increased impact through elevating in-region expertise.

Nurturing a Community of Practice

From the "big three" diseases of malaria, HIV, and TB, to many other deadly and often neglected ailments like rotavirus, typhoid, polio, and yellow fever; The GHCC's eight member PDPs are all working at the frontiers of science to develop new vaccines, treatments, and diagnostics for illnesses that impact the world's most vulnerable citizens. Informed by direct feedback from our members, the GHCC helps them undertake this critically important public health work by bringing all the benefits of coalition – sharing knowledge and networks, reducing costs and time, and helping them save more lives all over the world.

Preferred Provider Partnerships

Background

Launched in 2011, GHCC's Preferred Provider partnerships work to enable cost-effective clinical trials in remote and resource-limited environments by creating trusted sources and suppliers for key research services. Preferred Provider partnerships are renewed, or if warranted new partners selected, every three years through a formal application review process. The engagement has evolved significantly over time. Now, by leading working groups and supporting annual convenings, Preferred Providers are committed partners and key drivers of the GHCC's continuing efforts to improve the quality, speed, and cost of clinical development. They have also been integral to addressing risks and optimizing innovation in the wake of COVID-19's significant disruptions to process management and resource availability.

Results

4-6
GHCC Preferred Providers

384
preclinical and phase 1-4 trials evaluated

13
years of partnership

15
Service areas

12
annual performance reviews

Outputs Include
Standardized RFP Budget Grid established in 2012, PDP-Preferred Provider Partnership Best Practices Guidance co-developed in 2018.

Performance Evaluation
Annual performance evaluations are an integral part of the GHCC's working rhythm. A robust review process allows members to provide and receive transparent and bidirectional feedback, improving accountability in risk and quality management and bridging gaps in current clinical research practice.
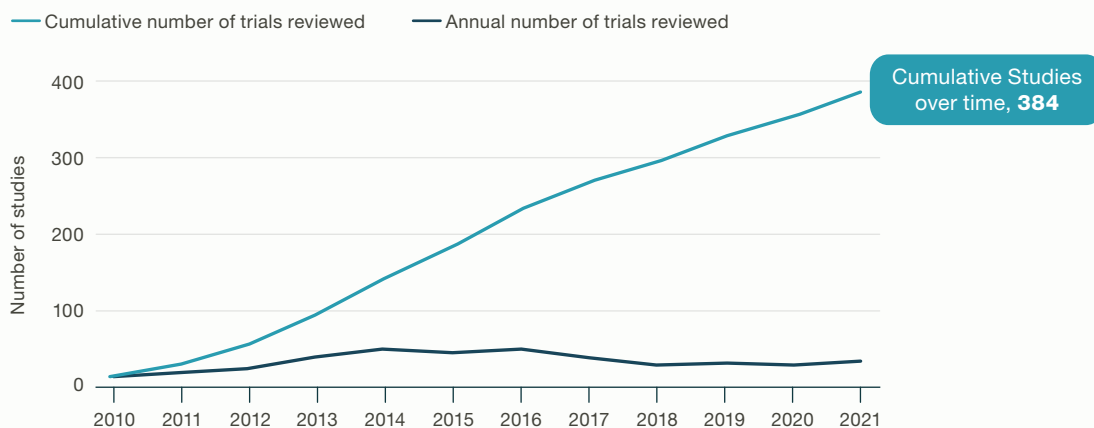
Discounted Pricing

GHCC members benefit from price negotiation across the Preferred Provider network. Term-limited "Rate Card" agreements have been established with five preferred providers for a range of services – including project and data management, clinical monitoring, safety and regulatory services, and quality assurance – and with four rate card providers for safety and microbiology labs, bioanalytical testing, and logistical services.

Alliance Management

GHCC members enjoy the benefit of collective knowledge sharing on topics such as inspection readiness, quality tolerance limits, and risk-based monitoring, providing greater levels of engagement and optimizing the success rate of clinical trials in LMICs. Strong alliance management and governance mechanisms enable quarterly and more frequent calls as needed, which was helpful for COVID-related efforts.

Studies jointly reviewed ➔ evidence to action

— Cumulative number of trials reviewed   — Annual number of trials reviewed

Cumulative Studies over time, **384**

> The preferred provider debriefs provide an opportunity for open engagement on issues and high-lighting successes and strengths of each preferred provider.
> I find it a useful exercise for both strengthening relationships with PP's and supporting future vendor selection.

– Marisa Russell,
IAVI

> I would say collaboration and feedback is improved through the GHCC mechanisms and having Alliance Managers that can connect on issues as they arise.

– Heather Hill,
Emmes

> The open communication and constructive criticism fostered have helped to improve our work together and build positive relationships.

– George Belai,
FHI Clinical

> Our continuous working relationship with the PDPs has encouraged friendly, productive collaboration and a focus on shared goals, and allowed IQVIA to further develop capacity around the world.

– Mauro Martinelli,
IQVIA

Future Plans

The COVID-19 pandemic has made it clear that further collaboration among stakeholders can yield faster, more efficient clinical trials. Expansion of the partnerships will provide the GHCC with opportunities to innovate and offer PDPs access to a larger resource network. By enhancing efficiencies through knowledge exchange, the GHCC hopes to fuel continued improvement in key patient and site outcomes, such as recruitment, retention, cost management, and patient-centered practice. The GHCC is also considering how best to expand the partnership model to engage more broadly and formally with academia and industry.

Portal and Knowledge Sharing

Background

The GHCC Portal Working Group (WG) was established in 2019 to review the existing GHCC SharePoint portal, understand user needs, and implement upgrades that add value for its members. As the product of close collaboration between PDPs and Preferred Providers, the new and enhanced portal is envisioned as an appropriately scaled Community of Practice model and serves as a go-to resource for informative, streamlined content on a wide range of topics relevant to GHCC member activities.
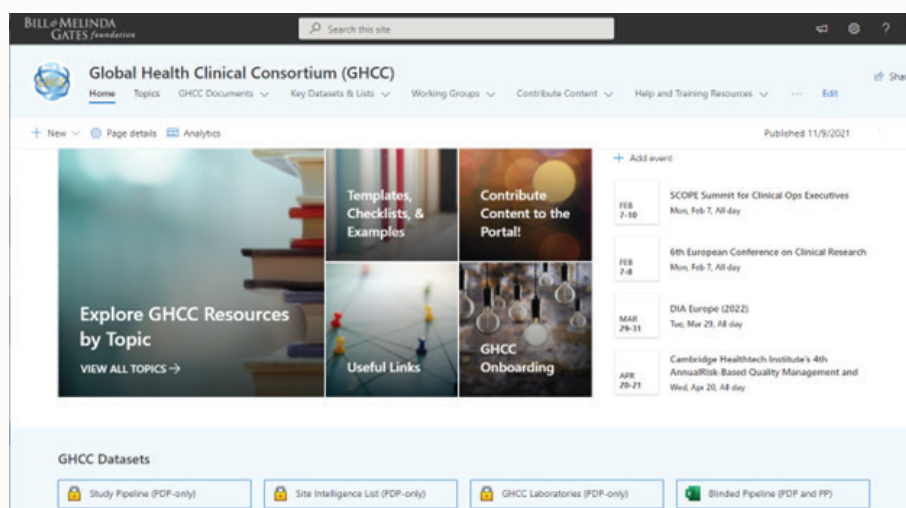
Results

Navigation, Search, Content, Meeting Info, Governance

priorities for improvement

2,748

documents archived and reorganized

170

key resources identified

20

new portal topic pages

Multiple

collaboration sites for sub-groups

User Experience Assessment
The Portal WG developed a survey to identify gaps in the existing SharePoint portal and presented its findings at the 2019 GHCC Convening.

Content Audit and Design
The group also conducted a comprehensive review of key datasets to simplify the search process by leveraging topic-focused metadata.

Future Plans

Following the successful launch of the enhanced GHCC SharePoint Portal, the Portal Working Group will:

• Facilitate user access by providing online training materials

• Promote the use and expansion of resources available within the portal to groups associated with the GHCC

• Provide ongoing governance, maintenance, and system improvements

Portal Relaunch
Taking advantage of best practices in modern SharePoint for information architecture and user experience, new topic pages and collaboration sites were developed.

"

The new portal is amazing, thank you for all the hard work and looking forward to using it in 2022.

– Sandra Johnson,
Medicines for Malaria Venture

It reinforces the GHCC collaborative spirit and provides valuable, streamlined content. It serves as a hub for GHCC working group activities, a repository for meeting information and a place where expert knowledge can be shared and accessed.

– Jen O'Reilly,
PATH

[This] will be a wonderful resource for all of us. Thank you for making it happen.

– Almari Conradie,
**TB Alliance**

"

Innovating Tools for Impact

In clinical trials as in so much else, new technologies are constantly innovating the way public health researchers collect, use, and share data, helping to accelerate the pace of science. In 2019, the GHCC formed a Technology Working Group to identify and implement innovative technologies that could address pain points in PDP-sponsored clinical trials, particularly in LMICs. The Technology WG launched with a needs assessment, studying the current PDP experience with platforms (eConsent, eSource, ePRO), wearables, and direct data capture. When the COVID-19 pandemic resulted in global lockdowns soon thereafter, the Technology WG quickly shifted to address immediate needs, finding creative technological solutions to optimize operations and remote monitoring in this new environment.

Centralized and Remote Monitoring

Background

Centralized and remote monitoring have long been key tools in providing quality oversight of clinical studies. While centralized monitoring relies on systems to detect trends, remote monitoring allows for source data review and verification without the need for an on-site monitor. Recognizing that centralized and remote monitoring of clinical studies allows for efficiencies in oversight, data quality, and cost savings, the GHCC works with collaborators to define best practices in a rapidly evolving research climate.

With the onset of the COVID-19 pandemic and new guidance from regulatory authorities, remote monitoring became an immediate necessity, propelling the industry to adopt new systems and technology to avoid in-person visits, previously considered essential for quality assurance. As such, PDPs that originally planned to adopt eConsent, eSource, and ePRO in 2022 implemented the platforms two years ahead of schedule. These upgrades allowed immediate access to trial data and ensured that trial participants could consent and provide diary and surveys from their home instead of traveling to the clinic. Active exchanges in the Working Group meetings expanded members' knowledge of the latest software, devices, and experiences implementing new technologies in the context of the mandate for remote work. Best practices were shared through case studies of remote monitoring and first-time deployment of eSource, eConsent, and ePRO.
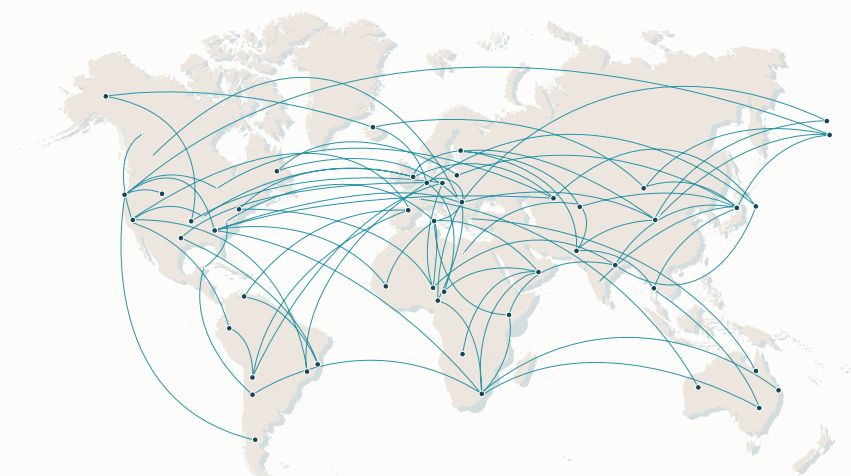
Results

Enabling Centralized and Remote Monitoring
Leveraging Centralized Monitoring Capabilities
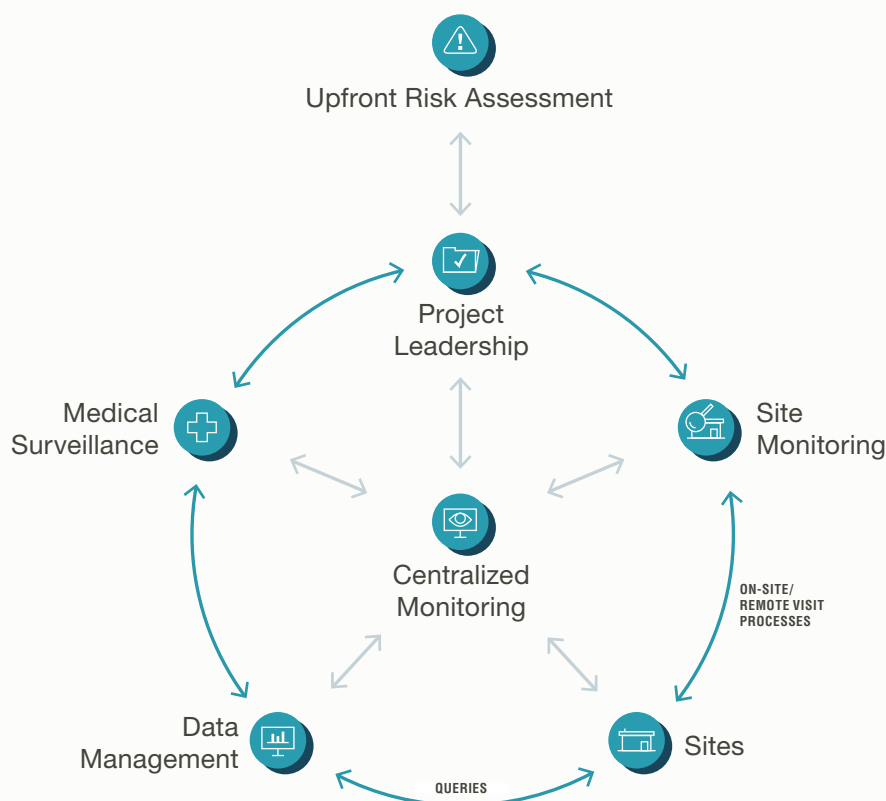
Acknowledgement to IQVIA for the adaptation of their slide presented at the 2019 GHCC Annual Convening

Understanding Quality Tolerance Limits
The GHCC facilitated four dynamic sessions on quality tolerance limits, promoting quality by design through centralized and remote monitoring of studies.

Adapting Studies for the COVID era
In the wake of lockdowns, the Technology WG organized platform demos to adapt studies not originally designed for remote monitoring. These platforms (Protocol First, DFnet, and Veeva SiteVault) allowed uploads of certified source documents and electronic Investigator Site Files under a 21 CFR Part 11 and HIPAA-compliant system.

Best Practices in Remote Monitoring
Building upon past learnings from GHCC annual convenings, PDPs and Preferred Providers in the Remote Monitoring WG collaborated on a guidance document to provide solutions for remote monitoring of clinical trial data.

Future Plans

As centralized and remote monitoring become ingrained into the conduct of global health research and regulatory guidance is updated, the GHCC will continue to refine its best practices and support member organizations in ensuring quality oversight of their clinical studies. In addition, the Technology WG will continue to provide a forum for PDPs to share best practices on platform implementation and electronic data integrity for sites and sponsors.

Clinical Trial Costing

Background

Product development is costly, and human-stage clinical trials account for a significant portion of the estimated 2.5 billion USD required to get a product to market. Despite this substantial investment, there was no standardized tool available to capture the total costs of clinical trials. So, drawing from the consortium's budget grid, the GHCC worked to develop a costing tool that provides a comprehensive view of clinical trial costs, including internal and outsourced activities and services. The tool has been standardized to reflect common functional elements (project management, biostatistics and data management, etc.) and gives every PDP member a much clearer picture of what a trial will cost, thus helping to inform better planning, especially amid the challenges of the post-COVID economy.

Pilot Program

After an iterative pilot stage in 2019- 2020, the costing tool has been adopted more widely in 2021 and now includes data from roughly 70 studies across all stages of clinical research.

Data Transparency

The tool allows for increased visibility of spending categories unique to resource-limited settings, such as investment in capacity-building. Breaking out these components provides a more accurate comparison of study procedure costs in high-income countries and LMICs.

Informed Decision-Making

The costing tool promotes collaboration across clinical, project, and finance functions, giving teams a basis for informed conversations about trial costs along multiple dimensions of interest (e.g., phase, disease area, patient population).
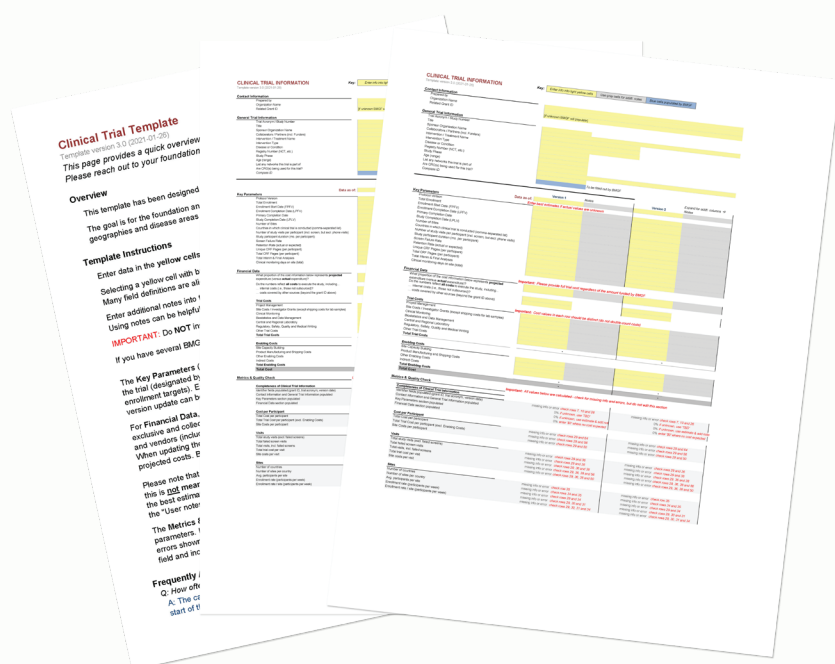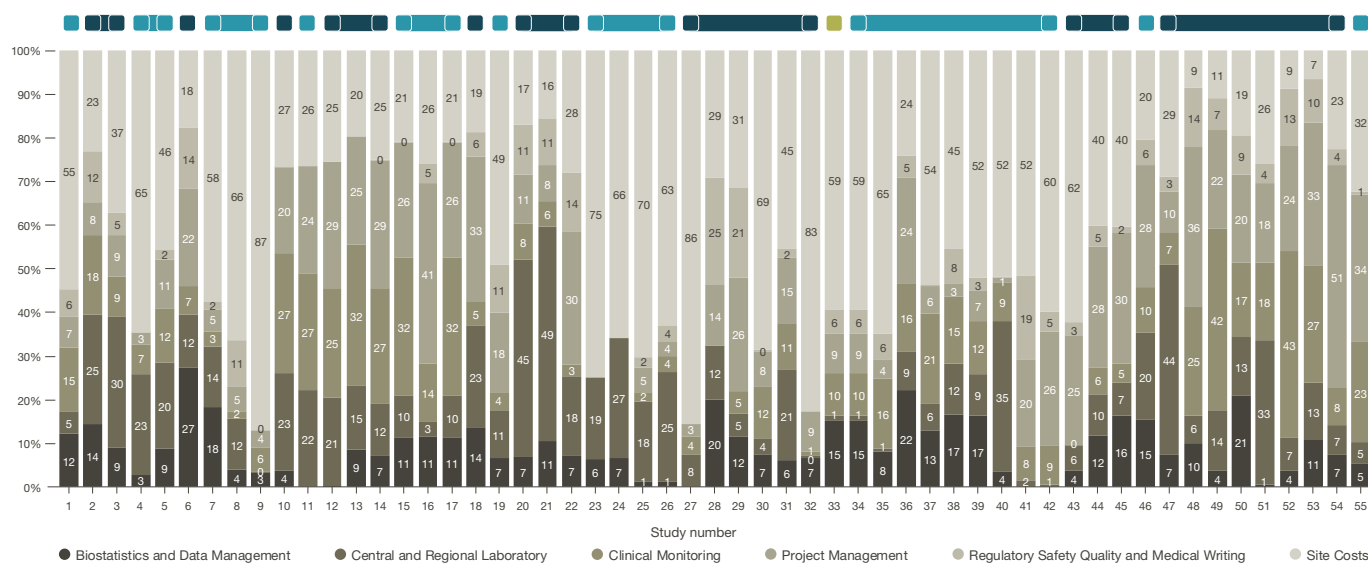
Results

Trial cost versus visits
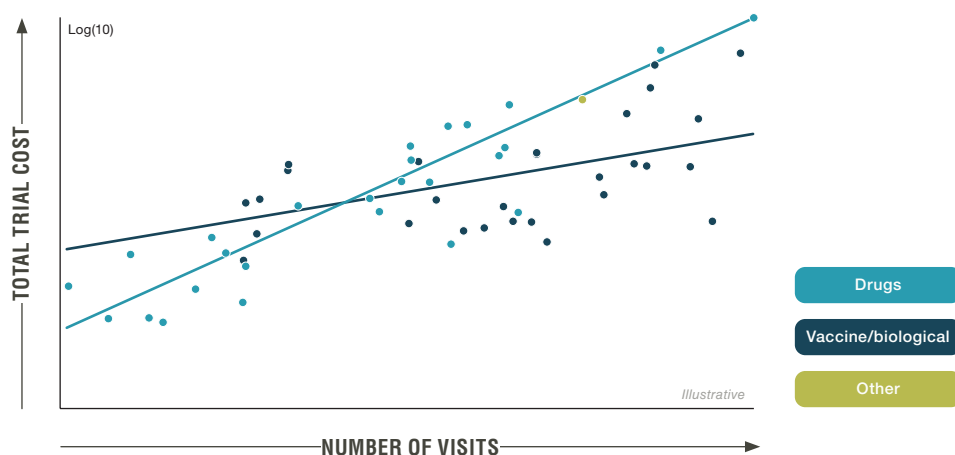
Distribution of costs between categories and grouped by disease area

Future Plans

Moving forward, more sophisticated cost modeling will become possible as new high-value and in-demand data sources are added and current tools evolve to reflect the unique cost drivers for clinical trials in global health. The GHCC will lead and facilitate discussions to improve the efficacy and impact of cost modeling and to guide development of best practices.

Impact of COVID-19 on Research

Developing a research ecosystem during and after the pandemic

COVID-19 has had a transformative impact on global research efforts. During the annual GHCC Convening in March 2021, researchers from around the world (virtually) shared the many challenges of running clinical trials during a pandemic. They also provided insights on the leading edge of clinical research, key findings on the making of a successful research site, and lessons from COVID-19 that will help researchers worldwide design improved studies in the future.

What makes a successful research site? Among other things, the ability to upgrade trial site infrastructure, including laboratory and testing facilities; rapid enrollment of large numbers of clinical trial participants to follow the epidemic curve; capacity to expand training as needed; integration of regulatory agencies to facilitate rapid regulatory pathways; and community outreach to build population awareness, trust, and willingness to participate in research.

Lessons Learned from COVID-19

✓

Research sites in LMICs can conduct robust clinical trials in record time.

Regulatory authorities can fast-track trials without compromising rigorous review.

Clinical trial protocols must be flexible enough to evolve with the accrual of new data.

Research outcomes improve with focus on a small number of centrally located sites.

✓

Media and politics play an influential role; misinformation can result in clinical trials being halted.

An established Data and Safety Monitoring Board (DSMB) can support efficient trial design and execution by providing critical local expertise.

Reliable, cheap diagnostics are crucial in the early stages of a pandemic.

✓

Repurposing of therapeutics should be considered.

In many LMICs, gaps in research capacity include inadequate funding and infrastructure, insufficient qualified personnel, and lack of integration among regulatory agencies.

Early investment in technology allows more rapid development of tools to combat diseases.

Future Plans

Preparing for the next pandemic requires action on multiple fronts. We need to improve surveillance systems and diagnostics for early identification of future threats and build the capacity of clinical sites, ethics committees, regulatory agencies, local supply chains and logistics management. We must also develop a more integrated "research ecosystem" that connects clinical sites, ethics and regulatory authorities, governments, manufacturers, and funding agencies. Other key steps include preparing an easily adaptable "package" of clinical trial protocols with approvals in place and enabling remote work by ensuring connectivity and improving digital platforms.

Conclusion

When the Global Health Clinical Consortium launched in 2009, the goal was to see if working together could help research organizations overcome many of the obstacles they faced separately in conducting clinical trials in resource-limited regions. Thirteen years later, what began as a network of loosely affiliated competitors is increasingly a community of colleagues and providers, working together to solve common challenges and advance public health in the most underserved regions of the world.

GHCC's members share information, platforms, trainings, innovative tools, and a research workforce, and are collectively more effective in the field as a result. They also share a growing bond that comes from honest, intensive, and continual communication about how to achieve goals, minimize setbacks, continue their important work even during a global pandemic, and pursue top-flight research in the local communities and regions most affected by the diseases under study. Moving forward, as the trust and spirit of collaboration that the GHCC nurtures continues to flourish, the rewards for clinical science, public health, and research communities in LMICs will be exciting to behold.

An approach of continuous feedback and applying lessons learned has contributed to the success of this collaboration effort.

Key factors for success include:
- Clearly defined objectives to focus the consortium's efforts.
- A Leadership Team to represent the PDPs and support initiative strategies.
- Having a lead/facilitator role to drive initiatives forward.
- Communication and bidirectional feedback, between the Preferred Providers and PDPs, to reinforce work and enable the greatest benefit from joint activities.
- Reducing unnecessary redundancies and taking advantage of the synergies inherent in collective action.
- Being flexible through the evolution of the collaboration to identify problems or opportunities as they arise more quickly.
- Identifying key service providers and incorporating them fully into the partnership and decision-making process.
- Keeping an eye to new and useful technological innovations that can solve challenges like remote monitoring more quickly.
- Meeting annually to assess areas for collective benefit, gaps, feasibility, and level of impact prior to engaging in initiatives and throughout.

Graphic and Content Contributors:

GHCC
Global Health
Clinical Consortium