

## Innovate to eliminate: a prerequisite in NTD programmes

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Innovation plays a critical role in progress towards achievement of the World Health Organization's road map for neglected tropical diseases 2021–2030. As disease prevalence decreases, the cost to identify and treat remaining cases goes up. Additionally, as programmes move to the surveillance phase, diagnostic tests need to be highly sensitive and affordable. Until the early end to the Ascend West and Central Africa programme, the Ascend Learning and Innovation Fund supported five projects from 2019 to 2021. Designed for innovation, the fund encompassed a range of activities, including operational research, product development and social behavioural change. This flexibility allowed innovation to bridge the gap between strategic policy and practical implementation, piloting and proving business models to respond to information found through Ascend.

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### Innovation is critical for achieving elimination goals

The neglected tropical disease (NTD) community is vibrant and diverse, with a long history of innovating to ensure that vital treatments controlling morbidity and mortality reach the world's most impoverished communities. Over the past 3 decades, national governments, local scientists, community volunteers and global partners have fostered continued innovation to address the global challenges of NTDs. The breadth and depth of these innovations include highly sophisticated science and technology, drug discoveries and product development where results are forthcoming on a decadal scale to provide community-led solutions.<sup>1</sup> One example of the latter is the wooden dose pole—an ingenious and innovative solution to adjust drug dosing that is low cost, reproducible on a local and global scale and a vital tool to help fight disease.<sup>2</sup>

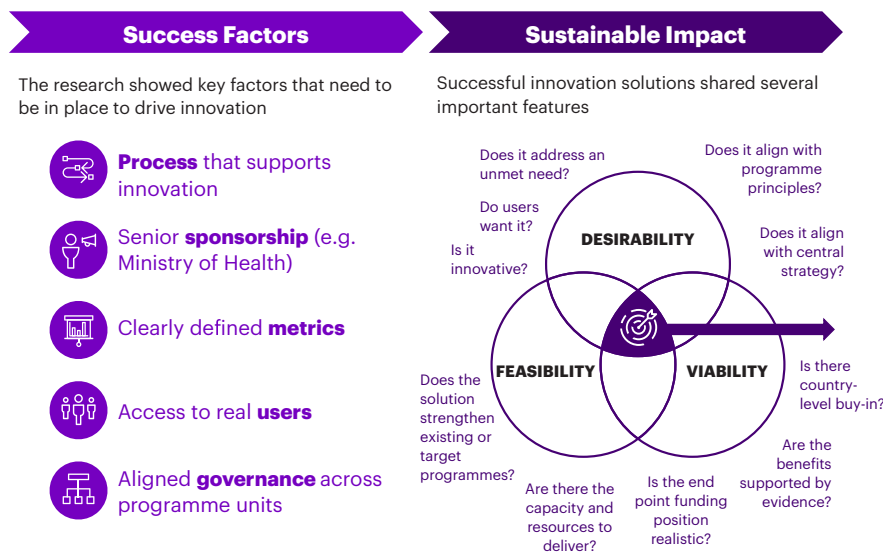
Operational research and innovation are fundamental enablers of elimination for all diseases, if they are evidence based.<sup>3</sup> There is a historic shortage of tools to combat NTDs and critical gaps in prevention, diagnostics and treatment remain and impede progress towards agreed targets, as highlighted in the World

Health Organization (WHO) road map gap assessment for each NTD.<sup>1</sup>

### Innovation fund methods

The goal of the Ascend Learning and Innovation Fund (hereafter called the fund) was to focus on practical and implementable innovative projects over short timeframes. Established in 2019, the fund was nested within the large-scale Ascend West and Central Africa programme (hereafter called Ascend)<sup>4</sup> to allow the opportunity to test new ideas and to increase the knowledge of NTDs and programmatic outputs alongside Ministries of Health (MoHs). At the heart of the fund, there were two core principles: targeting innovation across a range of operational activities and research areas and that MoH-led interventions and approaches would be prioritised and actively encouraged. These principles aimed to promote feasibility, desirability and scalability of innovative solutions.

The fund used the following definition of innovation: 'Innovation in this context is not just limited to high-tech or brand-new solutions, but is about i) developing and testing creative



**Figure 1.** Ascend Learning and Innovation Fund design focus on success factors and sustainable impact, based on the principles of human-centred design.

solutions to known challenges; ii) learning and openness to adapt, as innovation has an inherent risk of failure; and iii) supporting a vision for scalability and increasing impact. Examples of innovative work may include bringing in learning from outside of the NTD sector or bridging the gap between research and implementation.<sup>5</sup>

Initially, an analysis was undertaken of the WHO 2030 NTD road map priorities and the Ascend's theory of change, along with consultations with national staff to highlight key factors that needed to be in place to drive innovation in NTDs (see Figure 1). The fund prioritised sustainable impact by ensuring the projects selected were desirable (needed and innovative), feasible (able to strengthen existing systems and with demonstrable capacity to deliver) and viable (there was country-level buy-in and benefits, both supported by evidence).

Through a consultation process, the fund designed five priority areas (see Figure 2), informed by information from related funds, such as the Coalition for Operational Research for NTDs at the Task Force for Global Health and the African Research Network for NTDs, and expertise from Accenture Development Partners. During application, all applicants were assessed on how the proposed innovation could provide solutions to one of the fund's priority areas.

The fund was designed to support a range of activities, including operational research, product development and social behaviour change and to generate evidence on the fund priority areas. This flexibility allowed innovation to bridge the gap between strategic policy and practical implementation, piloting and proving business models to respond to information found through Ascend. Through this design and management, the fund offered agility and the space to test and trial promising hypotheses as they emerged in wider Ascend programming and beyond.

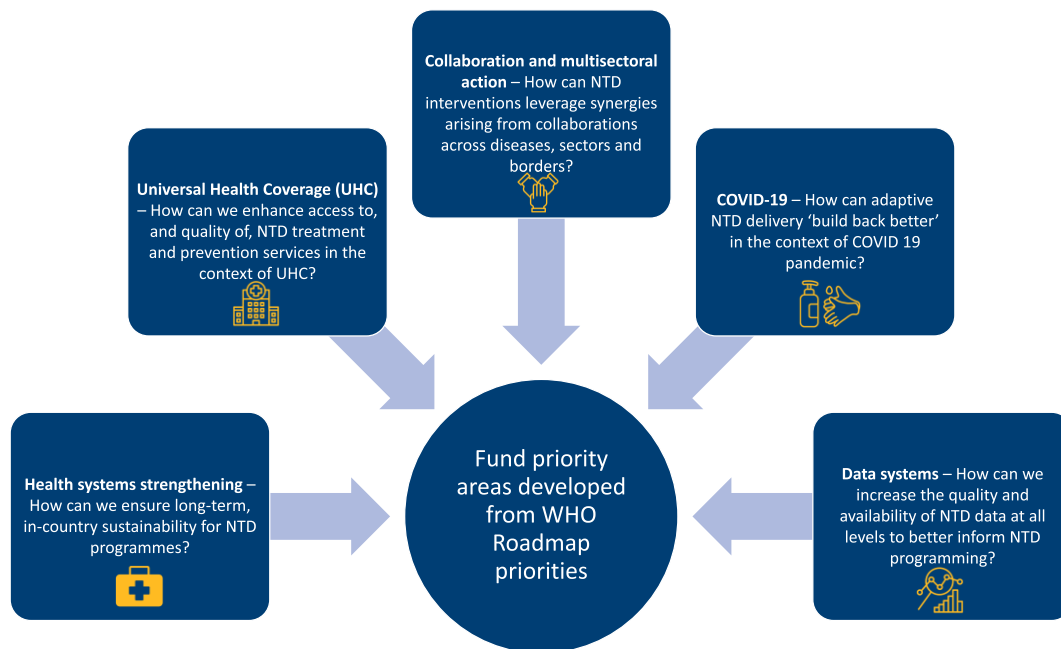
Taking a human-centred design approach to fund processes is a method that puts users and impact at the heart of the design.

As part of a wider commitment to context-specific innovation and diversity, equity and inclusion, human-centred design methods can be used to elevate country-led innovations, while standard approaches can bias towards certain institutions or types of applications.<sup>6</sup>

The fund utilised structured funding cycles consisting of a call for applications, transparent criteria for scoring leading up to long/shortlisting and selection of projects. The application process was developed collaboratively across the Ascend consortium of partners during a detailed design phase and then piloted within a test cycle. The fund team actively provided support to projects, beyond solely providing funding, and constant assistance was provided, allowing projects to react quickly to their needs. This was ensured by applying elements of agile project management, including frequent progress review sessions to encourage projects adapted according to current information to overcome challenges. In addition, a collaborate, learn and adapt approach was encouraged.<sup>7</sup>

## Innovation fund outcomes

Following a global launch of the fund, grants were made available ranging from £25 000 to £350 000 to complement NTD-focused activities across 13 countries in West and Central Africa. A total of 93 proposals were received from 2019 to 2020. Many proposals covered multiple fund priority areas (Figure 2). The largest number of proposals related to the coronavirus disease 2019 (COVID-19) response, followed by universal healthcare, health system strengthening and integration and data systems. Despite the fund's interest in supporting MoH-led projects, only 4% of applications were submitted by national governments. Going forward, fund communications strategies need to include space for more direct dialogue with national governments to ensure equity of access to funding opportunities. Overall, the fund supported



**Figure 2.** Priority areas for the Ascend Learning and Innovation Fund.

five projects from 2019 to 2021 (Table 1). The Schistosomiasis Control Initiative (SCI) Foundation-led projects were completed in 2021; however, following a reduction in the UK aid overseas budget, the remaining three projects were unable to continue due to a termination of funding.

### Spotlight on One Health and COVID-19

The One Health companion document to the WHO road map outlines how One Health actions are needed to advance holistic interventions to support disease elimination.<sup>8,9</sup> The Expanding NTD and COVID-19 control to mobile pastoralists in Chad (EXPAND) project, led by the Swiss Tropical and Public Health Institute, focused on establishing ways to increase access to preventive and curative health services for hard-to-reach populations, namely nomads. The project planned to train community relays to provide sensitisation (about COVID-19) and support surveillance activities by liaising with counterparts linked to public human and veterinary health systems, commonly referred to as a One Health approach. This innovative approach recognises the interconnection between animals and people that can lead to zoonoses ‘which are impacted by a growing globalised society where pathogens do not recognise geo-political borders’.<sup>10</sup>

A research team led by Bruyère Research Institute and its international research and governmental partners anticipated that the stressors that community drug distributors (CDDs) face in their work could worsen and multiply as they worked in communities during the pandemic. Despite the critical role CDDs play in community health, little is known about how COVID-19 has impacted their work in NTD programmes in terms of community acceptance and trust, as well as their potential role in COVID-19

response activities. The Fostering CDD resilience and well-being project aimed to support individual and systemic resilience in Ghana and Côte d’Ivoire. The Fostering CDD resilience and well-being project planned to use innovations like community healing dialogues to foster support for CDDs in their work and provide a forum for discussions about stigma, fear and COVID-19 mitigation efforts. The outcomes of the project would contribute to increased systemic resilience through fostering confidence in a volunteer workforce that has information, support and is resilient to challenges. Establishing these support mechanisms would contribute to strengthening health system support for this vital human resource and would enhance best practices in future MDA delivery.

Integrated interventions between COVID-19 and NTDs are a necessity going forward, particularly those that facilitate disease surveillance and tap into local networks of community volunteers to serve as information multipliers and intervention providers. The closure of such promising projects is part of a history of chronic underinvestment in cross-cutting issues and NTDs. Despite excellent returns as measured by value for money, low annual unit costs of delivery of donated drugs as well as well-defined health and social benefits, NTD funding lags behind other global health issues.<sup>10-13</sup>

### Key lessons from the fund

Innovation has been characteristic of NTD programmes, for example, the dose pole, Guinea worm drinking straws with filters and innovative health education materials such as Ekpo’s Snakes and Ladders games.<sup>14</sup>

By embedding an innovation fund into a live programme, Ascend provided targeted investment to support piloting of

**Table 1.** Projects supported by the Ascend Learning and Innovation Fund

Organization name	Project title	Proposed innovation
Bruyère Research Institute	Fostering CDD resilience and well-being; strategic adaptations to promote safe and effective mass drug administration (MDA) and COVID-19 response	This project was designed to apply a participatory action research methodology, which is an innovative approach to promote respectful collaboration, shared decision making and ownership within the community. Community members, volunteers and NTD programme stakeholders are engaged as peer researchers to support key interviews, focus group discussions and participatory workshops. A set of tools was to be developed to adapt existing volunteer training and supervision modules, including the use of digital technologies.
SCI Foundation	SAPIENS: a tool to conduct small area population evaluations using modelled population estimates	The project investigated the publicly available WorldPop population models and evaluated their application for NTD programmes. As a result, a tool and guidance was developed that provides NTD programmes (and beyond) to access and use modelled population data to analyse and address concerns with official population data alongside decision makers. This recognition of the quality of denominator data used by a NTD programme can subsequently improve drug allocation and increase the accuracy of reported coverage values.
SCI Foundation	Promoting access to preventive chemotherapy for NTDs among refugees: a systems-based approach	The project trialled the use of a systems-based approach to help outline strategies to enhance refugees' access to preventive chemotherapy against NTDs in Niger. These populations remain understudied in the NTD literature. The project contributes empirically to the sector by examining the factors (e.g. procedural, environmental and informational) that condition refugees' access to treatment. Furthermore, the proposed 'systems-thinking' approach is innovative. Systems-thinking encourages decision makers to examine the complex array of (in)direct and (non)linear connecting factors that influence outcomes while promoting a shared understanding of problem situations and solutions. By identifying the critical drivers of results, it enables stakeholders to identify optimal intervention areas for positive change.
Sightsavers	Country Health Information Platform (CHIP)—the use of secondary data	NTD programmes often struggle to set up and maintain a national NTD database that stores multiple years of programmatic data related to preventive chemotherapy NTD endemicity, surveys, treatments, morbidity management and stock in one central place. However, national programmes are obligated to submit drug donation requests and reporting forms that report these same data annually. The Expanded Special Project for the Elimination of NTDs (ESPEN) portal makes these annual reporting forms available through web APIs. CHIP was designed to integrate data from the WHO ESPEN portal and aggregate multiple annual reporting forms into a user-friendly dashboard that highlights data challenges and allows users to view data over time.
Swiss Tropical and Public Health Institute	Expanding NTD and COVID-19 control to mobile pastoralists in Chad (EXPAND)	Mobile pastoralists face difficulties in accessing services provided through standard delivery structures, including NTD control interventions. The project was designed to explore integrated delivery of health services with activities of veterinary health programmes. It aimed to facilitate disease surveillance for COVID-19 and NTDs by linking community liaisons/relays with the established national surveillance mechanism through mobile phone networks to enable a targeted and rapid response.

innovative ideas and evidence generation, ensuring practicality and responsiveness not only to local needs and priorities, but also to those of the international community, and thereby contributing to an innovation-friendly NTD control environment. The organised management of the fund enabled in-built agility, enabling rapid response to externalities (e.g. COVID 19-related innovations as a fund priority area). The fund's openness and flexibility (in terms of project size, regional scope and partners' eligibility) meant that innovative ideas directly related to strengthening NTD programmes were eligible for funding. Innovation funds should actively seek out and support solutions led by partners in the Global South, including national governments and local research institutions. Investment in innovation should contribute to the decolonisation of global health and strengthen research and disease control programmes.<sup>15</sup>

The rapid adaptation of Ascend and other large-scale NTD programmes to the challenges of COVID-19 through innovation has shown that there are lessons to be learned from the remarkably agile adaptation of NTD programmes.<sup>16</sup> The pandemic will continue to present an opportunity to use innovation to advance integrated drug delivery mechanisms, recognising that new approaches are required to reach those most affected by NTDs, that is, low-income groups who are largely untargeted by private-sector health investment.<sup>17</sup> MoH's will need to lead the fight against NTDs through initiatives promoting the feasibility, desirability and scalability of innovative solutions. The WHO NTD road map is clear: relying on market-driven innovation is not enough, and initiatives supporting cross-sectoral collaboration with other health sectors; Water, Sanitation and Hygiene and One Health; integrated surveillance; mental health and disability are integral to elimination.

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**Ethical approval:** Not required.

**Data availability:** None.

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