

# EXECUTIVE SUMMARY

## BACKGROUND

The objective of the study commissioned by Deutsche Stiftung Weltbevölkerung (DSW) is to analyse how fighting poverty-related and neglected diseases (PRNDs)\* such as HIV, tuberculosis and malaria, as well as antimicrobial resistance (AMR), contributes to global health security (GHS), and to propose policy recommendations to advocate in the field of GHS. The research includes, on the one hand, an assessment of the risks and benefits analysis for DSW to use GHS as a central advocacy narrative. On the other hand, it includes a selection of success stories resulting from research and innovation (R&I) in PRNDs and AMR within the framework of cooperation between the European Union (EU), Germany and Africa, which contribute to GHS or have the potential to do so.

## INTRODUCTION ON GHS

Global health security (GHS) has been defined by the WHO as the activities done concerning the **prevention, detection and response to infectious disease threats of international concern, on the basis of collective and concerted action.**

Furthermore, GHS focuses on reducing future pandemic risks through preparedness and contingency planning for a range of disease threats. However, there are several definitions and interpretations of GHS that reflect different “schools of thought” and insufficient international consensus around the concept.

The outbreaks of the last decade and the current COVID-19 pandemic reveal the glaring inadequacies of the International Health Regulations (IHR) in detecting and reacting to global health threats, as well as the critical weaknesses in pandemic preparedness of national health systems worldwide. Despite the emergence of more frequent and more intense outbreaks (SARS, H1N1 influenza, MERS-CoV, H7N9 influenza, Ebola) and warnings from scientists and experts, GHS has been neglected by the international community and governments, both politically and financially.

## THE VALUE OF INVESTING IN PRNDS AND AMR R&I FOR GHS

The global burden of PRND-associated morbidity and mortality contributes to a vicious cycle of poverty and disease that dramatically affects low and middle-income countries (LMIC), with social and financial consequences worldwide. Although most of the impact of PRNDs falls on LICs, some of these diseases are increasingly affecting the poorest and most marginalised populations of middle and high-income countries.

Financial investments in R&I in PRNDs and emerging diseases are not correlated with their global burden, which reveals the inconsistencies in policy and budget allocation concerning major global health risks. Persistent imbalances between research needs and research investments in tackling PRNDs and emerging diseases are proof of the extent to which the R&I agenda is not consistently driven by global health priorities, health needs, sound scientific evidence, and lessons learned from past experiences.

R&I plays a pivotal role in generating new scientific knowledge and developing more effective and affordable tools and technologies to prevent, diagnose, treat, control, eliminate and, eventually, eradicate threatening infectious diseases through comprehensive public health strategies

that benefit the world at large. Ensuring equity of access to affordable medical innovations worldwide, now strongly driven by COVID-19, would be an essential contribution to reinforcing global health security.

The global response to COVID-19 benefits from decades of programmatic experience and scientific research on PRNDs. Several drugs, vaccines and technologies developed to tackle Ebola, malaria or HIV, and research capacities built to respond to PRNDs, are now being repurposed or scaled up to support the global response to COVID-19 and accelerate the development of new preventive and therapeutic tools.

One of the major threats for GHS is the likelihood of AMR being the starting point for a new epidemic or even a pandemic. Drug-resistant pathogens are already a major challenge for health systems worldwide and will become a bigger burden in the next decades if urgent action is not taken. Despite recent efforts, political initiatives and funding have not been enough, and there is an urgent need for investment in R&I to develop vaccines and new drugs to combat resistant bacteria.

\* DSW considers PRNDs the diseases included in the annual G-Finder reports of Policy Cures Research, and their [neglected disease matrix](#).

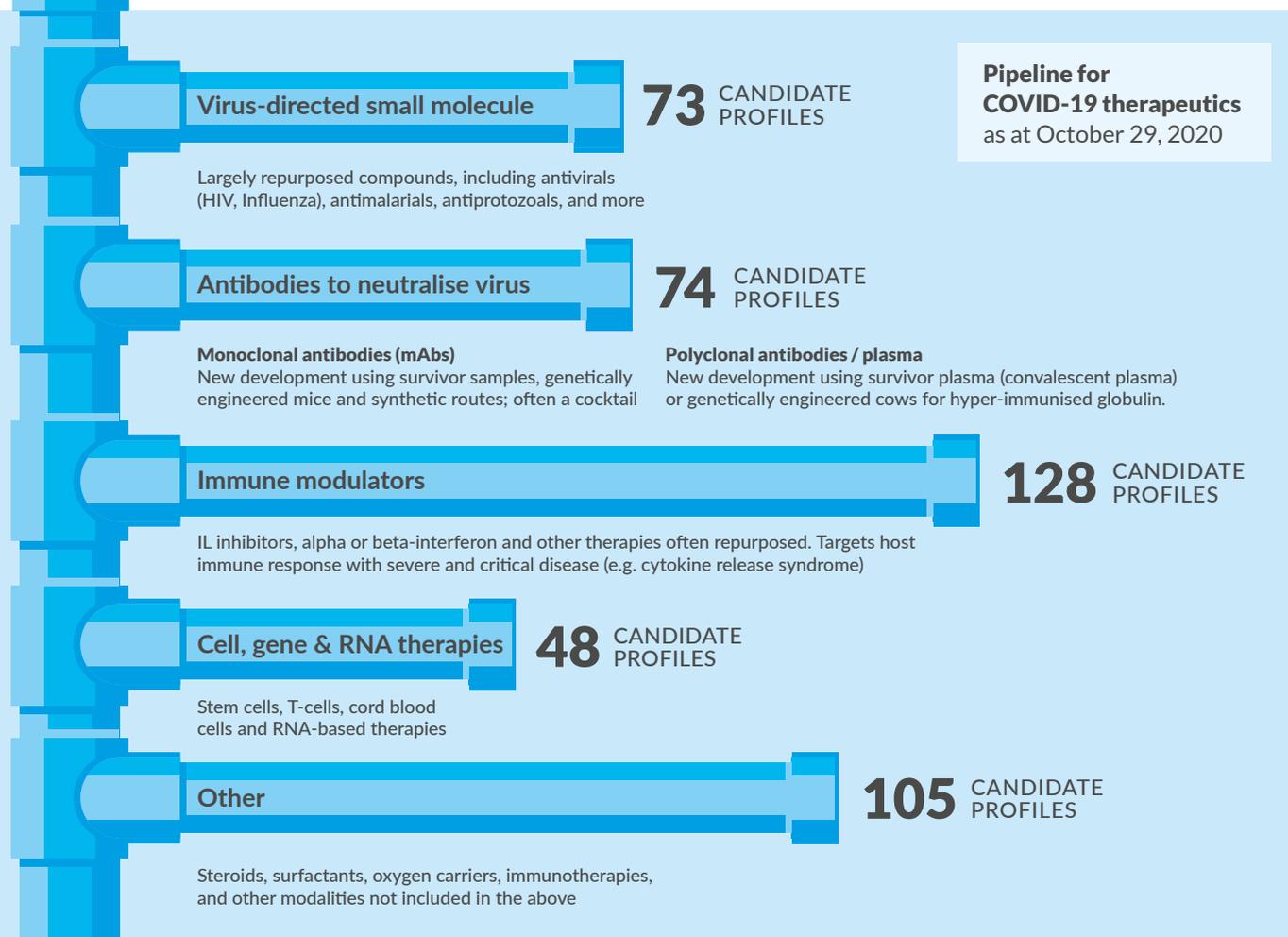
# SELECTED SUCCESS STORIES FROM R&I IN PRNDS AND AMR WITH A RELEVANT CONTRIBUTION FROM THE EU AND/OR GERMANY

European (and German) support to PRND R&I in Africa has been lacking in visibility, despite being among the largest public funders in the field. EDCTP is in itself the most relevant success story in terms of strengthening R&I capacities in Africa, developing new health products and tools to address health challenges associated to PRNDs, and boosting scientific cooperation between the two continents. The role of IMI and investments in PRND R&I, which in its origins had brought about expectations, now seems to be in question.

The selection of success stories is intended to highlight key financial contributions made by the European Union and Germany and relevant outcomes resulting from European efforts in the fight against PRNDs, and emerging diseases in Africa of relevance for GHS. All the success stories have received significant funding from the EU or the German government in the past decade, reflecting a sustained institutional commitment to develop R&I cooperation and support outbreak response in Africa.

In particular, the engagement of the EU and Germany in the Ebola response has been instrumental in generating scientific evidence and tools that are now being used in the global fight against COVID-19, and reinforcing European capacities in outbreak surveillance and management. It is worth highlighting, however, that most success stories are the result of collective and broader efforts of the international community to tackle major global health challenges. In fact, international cooperation, sustained partnerships and concerted action are at the origin of all the progress made in the field of global health in recent years.

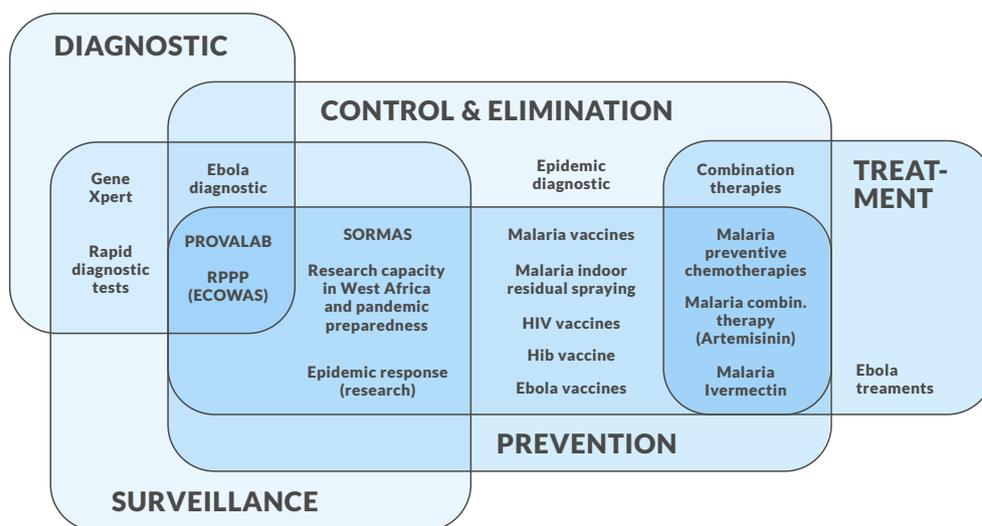
The success stories are representative of a broad portfolio of preventive, diagnostic and therapeutic tools, technologies and strategies used to deal with PRND and GHS challenges (particularly outbreaks and epidemics). Success stories have improved effectiveness (prevention, surveillance, diagnosis, therapeutics and disease control), strengthened capacities in R&I and disease surveillance, and/or enhanced the global delivery of health products.



Source: McKinsey and Company. COVID-19: briefing materials. Global health and crisis response. Based on data from Milken Institute, BioCentury, FiercePharma, FierceBiotech

The 2014 Ebola epidemic in West Africa prompted changes in the way the world responds to outbreaks, and was a landmark in the application of R&I efforts to tackle health security risks. Furthermore, health products, technologies and strategies applied in the 2014 Ebola outbreak are at the origin of vaccines and drugs being tested for now for COVID-19 and other pathogens. **EU and German investments in surveillance, pandemic prevention and preparedness in West Africa have been effective in tackling subsequent outbreaks (e.g. cholera, yellow fever, Lassa fever) in the region.** Moreover, disease surveillance systems (PROALAB Programme, RPPP programme) and new diagnostic testing capabilities put in place in West Africa have been replicated in other African countries and implemented in Europe to support the response to COVID-19. Of particular relevance is **SORMAS**, a digital platform for disease surveillance and outbreak response, which enhances national epidemic preparedness and response capabilities. SORMAS, specifically developed for Ebola, has been implemented in several West African countries to tackle other outbreaks. Under the COVID-19 pandemic, SORMAS is being adapted to support public health authorities in Germany countrywide and also in France, Switzerland and other regions of the world.

**Success stories' contribution to GHS interventions**



In the case of malaria, the tools and strategies used to prevent, treat and control the disease have been integrated in comprehensive public health interventions, allowing to aim for malaria elimination in several African countries. All these health interventions against malaria have been sustainably funded by the EU through different funding mechanisms, although to varying degrees. **Rapid diagnostic tests (RDTs), initially used as part of malaria diagnostic and control tools, have been progressively applied to HIV, influenza and other diseases.** At present, rapid tests can contribute to overall COVID-19 testing capacity, offering advantages in terms of shorter turnaround times and reduced costs, especially in situations in which RT-PCR testing capacity is limited, which is the case in many LMIC.

As regards HIV, decades of research have generated data about the immune system, set up vaccine technologies being repurposed against COVID-19, and created a worldwide infrastructure of clinical trial networks that can be pivoted from HIV to the pathogen that causes COVID-19 and other viruses. **African research centres, in some cases funded by EDCTP and strategic partners for HIV R&I, are now involved in COVID-19 R&I.** Laboratories, testing sites and recruitment networks that were rushed into action against the coronavirus exist because of the enormous investments made to fight HIV. HIV candidate vaccines and HIV therapies are being repurposed to assess their effectiveness and safety against COVID-19.

**European and German investments in research into TB diagnostics have been instrumental for the development of GeneXpert®.** The GeneXpert® test is a molecular test for TB developed by the Foundation for Innovative New Diagnostics (FIND) to detect resistance to both first line and second line drugs, facilitating the correct treatment for both MDR-TB and XDR-TB and helping to control AMR. Repurposing GeneXpert® illustrates how the global response to COVID-19 can be made by capitalising on the infrastructure being used to fight another disease, such as TB. The introduction of the Haemophilus influenzae type b (Hib) vaccine, even if not included in the G-FINDER list of PRNDs, is a prime example of partnerships and global mobilisation to reduce child mortality due to pneumonia in LMIC, which accounts for 15% of all deaths of children under five years old. The key role played by GAVI in introducing the Hib vaccine in immunisation programmes in African countries is estimated to have reduced child mortality and averted the need for up to 14 million doses of antibiotics from 2011–2015. **The EU and the German government have been sustainably funding GAVI since 2003 and 2006 respectively,** and have allocated specific funds for the introduction of the Hib vaccine in several African countries.

In terms of AMR, the review has not identified relevant success stories in the field of AMR involving European and African partners, despite the fact that by 2050 the mortality rate in Africa due to AMR could be almost ten times higher than that in North America and Europe. European funding for AMR consortia involving African research centres seems to be limited so far.

# GLOBAL HEALTH SECURITY NARRATIVE - OPPORTUNITIES AND RISKS

The COVID-19 pandemic will radically modify the perceptions about health threats and what GHS means not only for policy-makers, international agencies and academics but also for the general public across the globe. GHS is questioned in Europe because of the ambiguities in its definition, the link to security, defence and national interests, and the military engagement in “global health operations”. For many global health actors, the militarisation of global health is threatening the very concept of GHS.

In Africa, GHS is barely known and is interpreted as an attempt to protect Europe from African infectious diseases. The perception of whether it constitutes a health risk or a health threat differs between African and European actors. PRNDs are familiar diseases for African health systems that have to tackle on a daily basis the challenges posed by PRNDs and regular outbreaks; by contrast, in Europe, these are less known and frequently perceived as “imported” pathogens.

Under the current pandemic, the political concern about health security have reached historic proportions. The GHS narrative is now at the forefront of domestic and global priorities, receiving attention of policy- and decision-makers, which represents a strategic opportunity to advocate for greater investments in R&I in PRNDs, as a way to reinforce GHS and be better prepared for future risks.

All organisations interviewed in Europe and Africa have strongly highlighted the fact that much of the research being done to fight COVID-19 is building on the successes from previous research on PRNDs and emerging diseases in the last 30 years. Had there been no investments in these areas over the last decades, the fight against the current pandemic would have been much harder and much longer. Moreover, existing global health partnerships have been able to react swiftly to limit the impacts from COVID-19 and to develop new partnership modalities to respond to an unprecedented pandemic.

Taking into consideration the controversies and debates around the GHS concept, One Health appears as a complementary approach to overcome some of the GHS narrative shortcomings. Evidence indicates that health systems adopting a One Health approach strengthen surveillance on zoonotic transmissions, make the detection of an emerging zoonotic disease more likely and timelier, which results in interventions that are much more cost-effective.



# CONCLUSIONS

**The massive mobilisation of a large variety of actors to support R&I in COVID-19 and raise funds to fight the current pandemic would not have been as effective without decades of global partnerships in PRNDs.**

**European and African political efforts, as well as joint financial and scientific investments in PRNDs during the past three decades, have been essential to facilitate timely and effective research about COVID-19, and to develop tools** to prevent, diagnose and treat COVID-19 (and other potential outbreaks). The EU and Germany have the opportunity to capitalise on investments made in R&I in PRNDs and reinforce their positioning as a major player in global health. One of the initial reactions of the international scientific community to rapidly develop new tools and implement effective public health measures for COVID-19 has been to draw on the results and progress made in Africa in the fight against infectious diseases in general and PRNDs in particular, as well as other emerging diseases (e.g. Ebola).

Sustained European and German investments to support health systems, research capacities and preparedness for outbreaks in Africa over the past years have allowed many **African countries to react to the COVID-19 pandemic in an efficient and timely manner, and become essential partners of the global response** and mobilisation.

Massive political and financial mobilisation to respond urgently to pandemics (such as COVID-19) should **not be detrimental to continuing investing in PRNDs and AMR, as it jeopardises key achievements made in controlling other infectious diseases of epidemic nature** that represent major threats in terms of GHS.

Despite being the root causes of most recent epidemics, **little attention and effort is being paid to tackle zoonosis and animal-human transmission of diseases.**

**Global cooperation, multisectoral partnerships and community participation are key pillars** for effectively developing new tools and strategies to tackling the challenges posed by PRNDs, AMR and pandemics.

**GHS allows for a powerful narrative to advocate for investments in AMR and PRNDs that represent a major global threat at a political level, although reluctance among some African and European actors should be expected and addressed.** Universal health coverage should be one of the pillars of GHS strategies, as clearly highlighted by the WHO and other global health actors.

**One Health is receiving increased attention in the global health agenda and Germany's renewed commitment and investments in this field might represent an opportunity** to support more ambitious strategies to address health risks of zoonotic origin and prevent disease outbreaks.

**The lack of relevant European-African partnerships or joint research initiatives in AMR should be a warning to reinforce cooperation in this field,** putting AMR higher in the agenda of bilateral relations, and to increase funding for consortia involving research centres of both continents.

The introduction of more diverse and more complex **medical innovations in African countries** resulting from R&I in COVID-19 will probably require more **efficient and nimble national regulations** and public bodies to grant equity of access to new health products, ethical standards and patient safety in the region.