

Accelerator Discussion Paper 5: Research and Development (R&D), Innovation and Access

Developed by: Wellcome Trust & WHO
Contributions from: WHO Advisory Committee, Unitaid, UNAIDS and UNDP

Disclaimer: These documents are working papers and subject to change. They do not necessarily reflect the views of the 12 Global Action Plan signatory agencies. Key elements of the accelerator discussion papers will be used as inputs to the Global Action Plan.

VISION

Our vision for this accelerator is to rapidly build on what has already been achieved in the MDG era; promoting needs-driven R&D while ensuring access considerations are included in all aspects of the R&D pathway; to focus on better scaling of evidence-based innovations that have already been identified at small-scale and that can accelerate and improve the global health response, and fundamentally place country policy-makers and patients-needs at the heart of research and innovation decision-making. In this way, the national health authorities will value the role research and innovation can play in achieving the health-related SDGs and better support efforts to bridge the gaps between research outputs, access and impact.

This accelerator focuses on a small number of immediate concrete actions that address some of the most pressing challenges we face, that will lead to short-term impact and in the long-term, to an R&D, innovation and access system that is more equitable, aligned, and impactful to help achieve universal health coverage (UHC) and the health-related SDG targets. Access is an essential element of the collective actions proposed, to ensure their effectiveness and impact through efficient and sustainable scale-up and use of innovations. All these concrete actions are achievable by 2023.

APPROACH

This accelerator is co-led by the World Health Organization and the Wellcome Trust and is overseen by a WHO Advisory Committee, together with a working group comprising Unitaid, UNAIDS and UNDP.

The problem statement, key challenges and concrete actions have been developed following extensive formal and informal engagement with expert representatives from governments across a range of income levels, civil society, research institutes, global and national research funders and the private sector.

Two workshops were held to support this with the findings published online for transparency and wider feedback. The first, in London in February, focused on the challenge of optimising the global systems related to research and innovation in health. Innovation was considered through this accelerator to have a broad scope, going beyond just biomedical products, to also include interventions in the social sciences, service delivery and other related areas. The draft findings from this session were published on the Global Action Plan (GAP) website and can be found [here](#).

The second was held in Kigali in May and considered how country priorities could be elevated to help improve the current systems, in order to effectively scale innovations and support local capacity needs. To help frame this discussion and build the evidence base, the Wellcome Trust commissioned an online survey aimed primarily at relevant low and middle-income country stakeholders. This survey received around 100 responses from around 25 countries and was supplemented with in-person interviews. The draft findings from this session and high-level interim results of the survey are due to be published in due course on the GAP website and have also informed the challenges and specific actions described below.

In order to develop a stronger understanding of the evidence and lessons learnt from scaling innovations the Wellcome Trust also commissioned five case studies. These covered the HIV self-testing STAR programme in southern Africa, Meningitis A vaccine development and introduction in sub-Saharan Africa, Hepatitis C mobilisation and education campaign in Egypt, Health Innovation Technology Assessment Program (HITAP) in Thailand and the mDiabetes mhealth programme in India.

Common lessons for the process of scaling across the case studies were:

- the value of coordinated partnerships and coherent policy and regulatory frameworks, for example between local implementers, government, funders, researchers and recipient communities;
- the effectiveness of end-to-end programmes, that develop or adapt innovation to suit the context and take on implementation and access considerations in early stages of R&D and use this knowledge to carry out the implementation with appropriate partners;
- the importance of involving the broad range of actors in the design, planning, adaptation implementation and scale-up of innovation, supporting existing or creating new platforms that allow for the development and implementation of multisectoral and coherent national government priorities; and,
- the importance of locally-driven and locally-owned needs-assessment and demand for innovation.

PROBLEM STATEMENT

There is a lack of coordination of stakeholders in global research and innovation for health. National research, health and development priorities are not always driving the agenda, and promising innovations often do not reach those who need them most and achieve scale-up. The Global Action Plan presents an opportunity to: better align the global research and innovation for health system; elevate national research, health and development priorities; and identify catalytic actions required for early adoption and successful scale-up of innovations.

JOINT ACTIONS TO BE TAKEN

Our consultations highlighted that the impact of research and innovation for health is undermined by a weak system - at national, regional and global levels - which fails to direct funding and activities towards addressing country health priorities effectively or coherently. The following actions will tackle these systemic issues.

Goal 1 - Access should be built into the R&D pathway

Several challenges limit the early adoption and scale-up of innovations, from funding constraints and lack of evidence to slow changes in country policies, programs, and provider practices, too fragile health systems, and incoherent policy and regulatory frameworks. Among these is the challenge to ensure that equitable, sustainable and affordable access is a core driving principle at each stage of the R&D process and that national and international research for health agendas are centred around common principles, to ensure early access to innovations by those who need them. Access is often thought about too late in the R&D process resulting in delays from when innovative products are developed to when they are delivered, and therefore impeding better health outcomes. As illustrated by the Meningitis vaccine project, early considerations for the context in which a product is needed from R&D through to its implementation, including considerations such as price, product adaptation and delivery, can achieve big results (see Box 1).

Box 1. Case Study of Meningitis A Vaccine Project (MVP)

Meningitis A Vaccine Project (MVP) brought together scientists, regulators, African governments, international agencies, non-governmental organizations, civil society, funders and industry, to develop and roll out an effective and affordable vaccine for Meningitis A in Sub-Saharan Africa.

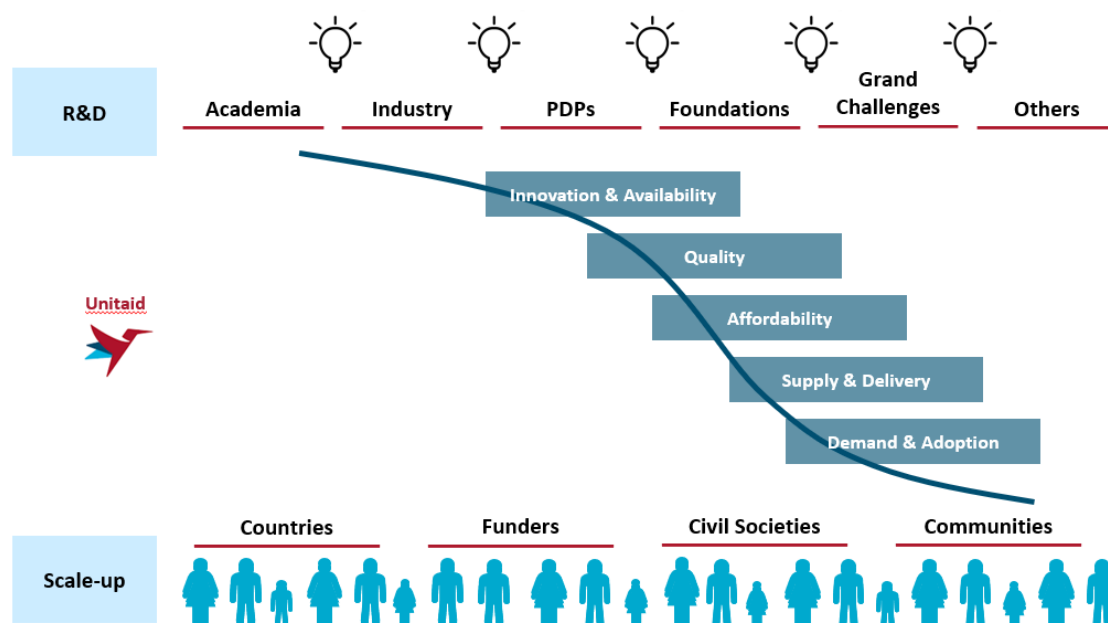
In 2008, Gavi, the Vaccine Alliance approved support to immunize the at-risk population (aged 1 through 29 years) in the 26 meningitis belt countries with preventive campaigns. In the same year, African Health Ministers from the meningitis belt countries adopted the Yaoundé Declaration, committing themselves to introduce this highly promising candidate meningitis vaccine. By the MVP closure conference in 2016, Gavi had disbursed US\$367 million for an emergency stockpile and to meningitis A campaigns. The strong political commitment from countries as well as the end-to-end nature of the project, which involved R&D, mass vaccination and integrating the vaccine into routine immunization programmes, has been critical to its success. The design of the vaccine was also specific for the context, the circumstances of implementation and end users were considered at the earliest stages. For example, the vaccine was developed by the Serum Institute of India to require controlled temperature chain, instead of the more restrictive cold chain, helping it achieve better coverage.

Since 2010 MenAfriVac® has been administered to more than 270 million Africans in 26 countries. Thanks to the MVP, it is estimated that between 250-500,000 cases of MenA have been prevented; there has been a 99% reduction of disease in nine of the target countries where the mass vaccination is complete.

Fragile health systems, lack of capacity and incoherent policy and regulatory frameworks are also key challenges that hinder access and scale-up of innovations. There are already best practices and proven interventions that could be scaled up and promoted through south-south sharing and collaboration. For example, creating enabling policy and regulatory frameworks, promoting cross-sectoral and multi-stakeholder engagement, support evidence-based priority setting and assessment of technologies, strategic pricing and procurement, supply chain management, implementation research and pharmacovigilance.

INVITATION FOR PUBLIC COMMENT
GLOBAL ACTION PLAN FOR HEALTHY LIVES AND WELL-BEING FOR ALL

There is also a lack of consistency across funders in terms of addressing access barriers that hinder products being introduced and scaled, which can complicate efforts to introduce and scale up access to new technologies. These barriers and constraints collectively mean that innovations are slower to be introduced and find it harder to reach scale where cost savings can be made. Building these considerations in from an earlier stage, and where they are already in place, optimising them with some clarity on good practice, could have significant impacts further down the chain, helping to tackle this problem. The diagram below provides an example of Unitaid's model which aims to bridge access gaps between R&D and implementation of innovation at scale by overcoming key access barriers.



Action 1 – Develop Global Good Access Practices for Innovation in Health.

- Including consensus-based policy elements, in funding agreements for all public-sector, philanthropic, and private-sector funds invested in global innovation for health projects (in line with local needs), would help to ensure availability, affordability, adaptability and quality provisions are included in grant agreements, and where they are already in place, this could improve them.
- Good Access Practices could be available after a consultation process during 2020 with interested parties, including UN Member States, funders, civil society, innovators (e.g. research institutions, PDPs and the private sector) and patients/community representatives. The aim would be for funding and financing agencies to align their policies and grant agreements with these practices as appropriate, shortly after this, and therefore create the necessary conditions to drive early demand and equitable, affordable and sustainable access in priority areas.
- In addition, agreement could be made upon a set of principles for engagement to guide collective action from the GAP signatory agencies to bring innovation from R&D to scale in countries, in a shorter time. The principles, such as impact, affordability, effectiveness, efficiency, and equity, will help the agencies assess innovations under development that require those concerned, in their respective mandate areas, to coordinate and collaborate for scale-up. The latter includes identifying and addressing critical access barriers to ensure early equitable, affordable and sustainable access.

Goal 2 - Better coordination and alignment of research priorities with the health-related SDG targets.

There are coordination challenges across the system. Even when national research for health agendas exist there are often differing priorities from government ministries, national research institutions and international funders. This makes research less strategic, undermining better long-term health outcomes and progress towards the SDGs. These coordination problems can also lead to standstills where issues get bogged down, and lives are lost as a result. We need to ensure that we have the right fora to bring people together and resolve these problems by providing more coordination and alignment of national, regional and international priorities. All actors in the research for health ecosystem should develop, support, and participate in effective systems for coordination.

Box 2. HIV self-testing Africa (STAR) initiative

STAR is the largest international HIV self-testing programme, covering six countries in southern Africa including Malawi, Zambia and Zimbabwe, South Africa, Swaziland and Lesotho. Funded by Unitaid and partners, this project developed evidence to inform the scale-up of self-testing, such as the accuracy of kits applied by lay users and distribution methods for high-risk populations. This evidence-informed WHO guidance and supported the development of national policy on HIV self-testing. Key to STAR's success is how the project was set up to facilitate collaboration and engagement with a broad range of key actors, such as Ministries of Health, communities, researchers and manufacturers, leading to more appropriate and effective self-testing kits and distribution, better information sharing about HIV self-testing and accelerated development of related policy and guidance.

As of November 2018, STAR has distributed 2.3 million HIV self-testing kits in the six countries and has estimated that 81% of people are now aware of their status because of the intervention, compared to only 45% before the programme¹.

Action 2 – Create new country-led forums (or support existing ones) to accelerate research, access and the scaling of innovations in support of the health-related SDG goals:

- Develop a mechanism to ensure scaling of identified innovations, based on national priorities to support local problem articulation, sustain investment in new ideas to address these problems and improve access. These innovations could include biomedical products but also be broader in scope, including interventions addressing the policy and regulatory frameworks, social sciences, service delivery, implementation research and other related areas.
- This mechanism should build on existing efforts in the current global architecture for health, recognising there is a gap that it seeks to address, but interacting with other relevant structures and initiatives to avoid unnecessary duplication.
- Based on country demand, policymakers in countries will be supported by WHO and other relevant agencies to convene GAP member agencies, public health agencies, research and innovation funders, financing agencies, civil society and other partners to identify key

¹ STAR Initiative, Unitaid and WHO (2018). Knowing your status – then and now realizing the potential of HIV-self testing. Unitaid, HIV self-testing Africa Initiative, World Health Organisation.

research and innovation priorities to accelerate progress towards health-related SDG goals. WHO-curated lists of existing evidence-based innovations would be used as guides for country-led decision-making. Roles and responsibilities for GAP agencies and other partners would be agreed in pilot countries with annual reporting on progress in terms of additional scale-up achieved.

- This process will generate, or update, SDG-aligned national research, development and health innovation agendas, which will be directly framed around progress towards health-related SDG targets. These agendas should be periodically reviewed and updated, and a robust monitoring and evaluation mechanism should be established. It would address critical data, process and finance needs for scale-up, and could be supported by an innovation list (discussed below in Action 5), with documented impact, cost-effectiveness, affordability and scalability, including relevant access plans.
- It should also support policy, legal and regulatory harmonisation processes, encouraging efficient and collaborative in-country or regional regulatory approval processes and development of coherent policy, legal and regulatory frameworks where these are barriers to access. as the process could also help to better define UHC interventions and support the implementation and scale-up of health services and systems. A relevant example is provided in Box 3.
- The forum should be attended and convened by national actors (including government ministers) in the relevant country, with support from WHO regional offices and other relevant agencies. Other attendees would include GAP agencies, regulatory authorities, potential funding and implementing partners, and key civil society and community groups. This forum would also be a setting for partners to provide financial support for top priorities. To maximise the impact and coordinate common country priorities, other relevant regional bodies (e.g. the African Union or ASEAN) should also have a central role. It will need a clear accountability mechanism and should have a focus on transparency.
- The countries for the pilot should be selected as soon as possible using agreed criteria, with inaugural meetings happening in Q1 2020. Aim to progressively expand mechanism using regional, and other fora over the next 3 years.

Box 3. Ghana experience in promoting multisectoral policy and regulatory coherence forums

The Minister of Health in Ghana has established a multisectoral forum to promote policy and regulatory coherence for access and delivery of new health technologies. The work, supported by UNDP and other partners, has focussed on strengthening components of the health system by addressing key policy gaps within the health sector through the formulation of the National Medicines Policy (NMP) and the National Health Research Agenda, which provide policy and strategic guidance on promoting access to health technologies and addressing bottlenecks to their introduction and scale-up.

The NMP, adopted by the Cabinet in May 2018, aims to fill an existing policy gap by setting out updated policy guidance for the governance and regulatory control of the pharmaceutical sector. The NMP is critical for the support of coordinated action across sectors and ensuring the quicker introduction and uptake of new health technologies.

In promoting an integrated approach, Ghana has worked with a variety of national stakeholders to provide the needed technical support and capacity building interventions to

ensure that core functions within the regulatory and safety monitoring systems, disease control, and supply chain management were strengthened.

Action 3 – Establish and maintain a new annual global forum to coordinate and accelerate the late stage pipeline of critical medical and health products (including diagnostics, medicines, vaccines and vector control).

- This forum would enhance the continuing review of coordination and acceleration processes and encourage cross-agency problem solving where delays have been identified. It was established that there is a need for such a forum that covers such a broad range of products, which would be attended by a wide range of the relevant actors, including the Heads of International Research Organisations (HIRO), to discuss priorities, review progress and promote financing.
- It would also identify aspects of the public interest product development landscape that are underfunded and that could be filled to ensure access for products emerging from the pipeline.
- The WHO would maintain monitoring of a central pipeline, track progress and alert the community to delays in three categories (2-5 years from licensure, <2 years from licensure, filling licensure to access/impact gap).
- This forum could also be established by Q1 2020 and be assessed on a regular basis to ensure it is fulfilling its objectives and aiding the acceleration of progress to SDG3.

Goal 3 - National voices should be heard.

National voices, in particular from low and middle-income countries, need to be fundamental parts of a well-functioning global research for health system, supported by scientific input. In many larger middle-income countries, such as Brazil, China and South Africa, there are growing research systems with increasing national funding support. However, most research funding still currently comes from a handful of government, philanthropic, and private funders who mainly fund in their domestic context but also often fund internationally, according to their own agendas.

In many countries, clear national agendas do not exist, but even when they do international funders are not responsive enough to the demand signals emanating from locally-set agendas. There is also a cycle at the moment which hinders countries with the least capacity. Excellence is funded, which leads to more investment, higher standards, and then further funding. We need to put more emphasis on building excellence alongside funding excellence if we are going to support some of the poorest countries develop their research for health capacity. There are also lessons to be learned in how to build local expertise and demand for research evidence to inform health decision-making, such as Thailand's Health Intervention and Technology Assessment Program (HITAP) (see Box 4 below).

Box 4. Case Study of the Health Intervention and Technology Assessment Program (HITAP) in Thailand

HITAP was established by the Thai Government in 2007 to assess health products and devices, including cost-effectiveness studies and budget impact analysis, to inform coverage decisions for the public health system. HITAP's health research places emphasis on country-led decision making, based on domestic priorities and criteria, as opposed to academic or global health trends. Many of the 150 HITAP studies conducted in Thailand have fed into the national policymaking process¹. HITAP is widely regarded (if

under-recognised) as a successful example of locally driven demand and capacity building for the development and use of evidence to drive domestic spending on health. In recognition of HITAP's expertise many countries, including Indonesia, the Philippines, Vietnam, Bhutan, India, Kenya, are requesting HITAP's assistance and partnership.

Action 4 – Governments and international funders should explore opportunities for co-funding to help drive a shift in the centre of gravity of decision making to countries and regions.

- Criteria could be established and agreed which, when met by countries, would trigger greater flexibility in international research funding, with funding decisions made either in-country, in regional platforms, or in co-developed models between donor countries and national authorities, explicitly framed around accelerating scale-up and impact. Ensuring a prior interest to scale by national authorities and partners, if the study achieves a successful outcome, will be important. This would help to boost the capacity and demand in countries and regions for developing research and innovations.
- This would expand on existing successful models including health science and innovation-oriented funding closely related to national health authorities and aligned to national health priorities. The India Alliance, African Academy of Sciences, the BRICS TB Research Network, and in-country Grand Challenges initiatives were highlighted as ongoing examples of the shift in resources and decision-making to the countries where problem articulation and scaling needs to occur.
- It was highlighted that research management support at many LMIC institutions is either lacking or sub-optimal and that international funders should consider how they can adapt globally accepted practices to local settings. This could help to support the development of local leadership on research and innovation priorities for health.

Goal 4 – A more optimised innovation system.

A major challenge to the successful scaling of innovations is a lack of information for domestic and international funders on what works. Part of this is due to capacity constraints in order to set evidence-based priorities. There is not currently an evidence-based list of innovations that could be scaled alongside an independent assessment of the likely impact. There is also a significant amount of research for health information, particularly on clinical trials through the WHO Global Observatory on Health R&D, which is under-utilised, at least in part, due to a lack of awareness. A strong understanding of ongoing research for health and innovation activities and gaps should inform the identification of priorities and actions for scaling innovation. Implementation research has also not received enough attention, increasing the risk of failure when innovation is scaled-up.

Action 5 – WHO to curate an evidence-based list of existing innovations that could be scaled.

- The WHO should curate a repository of evidence-based innovations, that require concerted action in order to scale-up, and which could have a significant impact on accelerating progress to the SDG3 targets in the short-term. The proposed approach builds on the outcomes from a recent workshop in Rwanda with participation from over 20 developing countries from all the major continents. Annex A provides the first draft of this list created by the WHO for input and refinement, through a consultative process, which is based on contributions received during the accelerator consultation in 2019.

INVITATION FOR PUBLIC COMMENT
GLOBAL ACTION PLAN FOR HEALTHY LIVES AND WELL-BEING FOR ALL

- This draft list identifies opportunities to support successful innovations scale-up, improving access to innovations for those that need them. This could be supported by national and international funders, facilitated by the new forum proposed in Action 2.
- This list will be iterated over the next few months with input from stakeholders and made available by September 2019. It should be publicly available on the WHO Global Observatory on Health R&D website, for national and international funders to access.
- While the GAP signatory agencies do not include some of the major funders in R&D, many are nonetheless funding downstream implementation of new technologies and innovations. Therefore, they have a major role in assessing innovations, the disease burdens they would address, cost-effectiveness, affordability and potential scaling. This is an important pull mechanism, leveraging and incentivising investors in the earlier part of the R&D pipeline. If it was possible for a curated list to also include potential game-changers from the R&D space, it could strengthen this pull mechanism.

ANNEX A – WHO’S DRAFT LIST (FOR CONSULTATION) OF EVIDENCE-BASED INNOVATIONS FOR SCALING THAT REQUIRE COLLECTIVE ACTION

Introduction

As part of its leadership of the R&D, innovation and access accelerator, WHO reached out to all Member agencies for successful experiences of collective action leading to scale-up and impact of innovations. The following themes emerged.

- There are several examples of relative success to be built upon where access to innovations has been achieved, and lives have been saved. These include various new vaccine introductions, Seasonal Malaria Chemoprevention, paediatric formulation for TB therapy, HIV self-testing and access to Hep C treatment in some settings.
- In these cases, the relevant actors each appreciated their role and acted in a coordinated manner. This includes the private sector, push R&D funders, pull financing agencies, UN agencies, civil society, governments and others.
- In all successes the following elements were addressed: global and national policy (including disease burden to be addressed, safety and efficacy), product registration and WHO prequalification where appropriate (including product quality assessments), affordability and financing, procurement, supply, demand and delivery at scale. In some cases, adaptability was an important element.

Below we list examples where collective actions could scale innovations and save many hundreds of thousands of lives per year, including in the short-term (table A). This is a draft indicative list which will undergo further consultation in months ahead, and then be kept up to date as a living document. GAP agencies were asked to suggest areas of focus applying four criteria: evidence for impact, disease burden to be addressed, affordability and cost-effectiveness and feasibility of delivery of large scale. Lessons learned from successful scale-up were incorporated. In addition, available prioritisation processes were reviewed including Innovation Countdown 2030.

Linking Innovation to Access; achieving healthy lives and well-being for all

Scaling up available products and solutions where the public health impact will be compelling

Cross-cutting action required on Diagnostics access in tandem with the development of intervention methods (including AI-based digital approaches):

Diagnostics requires major additional support as it is underfunded in global health and it enables screening, surveillance, disease burden estimates and clinical management decisions to be based on better data, and allows for licensure and evaluation of medicines, vaccines and vector control. Collective action is required to harness the massive potential of AI-based digital health applications, expand molecular diagnostics capacity and point of care testing. Links to impact are possible in the short term.

TABLE A: Available innovations which require collective action to achieve further scale (DRAFT)

- 1) **SDG 3.1, 3.4:** Point-of-care RDTs that increase access to screening and management of common NCDs including hypertension (including in pre-eclampsia), cardio-metabolic panel for CVD, diabetes (POC diagnostics combined with mobile health applications will greatly increase access to NCD screening, testing and management)

- 2) **SDG3.1** Affordable, heat stable, easy to administer packages for prevention and management of post-partum haemorrhage to prevent maternal mortality (PPH accounts for approx. 35% of all maternal deaths)
- 3) **SDG 3.2** Kangaroo mother care to prevent neonatal mortality (>30% mortality reduction in stabilized LBW infants in low-income settings)
- 4) **SDG 3.2** Affordable easy to use neonatal resuscitators (part of UN essential commodity report 2012)
- 5) **SDG 3.2** Increasing access to pulse oximetry, hypothermia and respiratory rate monitoring
- 6) **SDG 3.3** Expanding access to high-quality point-of-care RDTs for HIV self-testing, Hepatitis C, Malaria (gains through better disease burden data, diagnosis and treatment)
- 7) **SDG 3.3** Use innovative approaches to further scale access to malaria chemoprevention building on lessons learned to date (builds on SMC, IPTp, IPTi)
- 8) **SDG 3.4** Evidence-based innovative scalable psychological interventions such as the Friendship Bench and Problem Management Plus for mental health
- 9) **SDG 3.4, 3.7** Innovative approaches to achieving high coverage of HPV vaccine as part of comprehensive cervical cancer prevention strategies in adolescent girls and women, including increasing affordability and evidence to support the use of one dose HPV vaccine
- 10) **SDG 3.8:** Frugal innovation for access to assistive products including eyeglasses, hearing aids, and wheelchairs (only 10% of the 1 billion in need have access due to cost)
- 11) **SDG 3.B:** scale up access to thermostable medicines and vaccines to remove the need for cold chain
- 12) **SDG 3.B:** scale up access to needle-free delivery of medicines and vaccines
- 13) **SDG 3.B:** Affordable, secure digital identification systems suitable for resource-poor settings to enable greater coverage of essential health interventions including immunization
- 14) **SDG 3.D** Expanding access to confirmatory PCR testing using an easy-to-use cartridge based automated PCRs for use in secondary health facilities (e.g. TB, Lassa fever, Ebola, Nipah, MERS, others) (gains from better disease burden data, diagnosis and treatment)

Compendium of innovative health devices

With respect to health devices, equipment, assistive products and other technologies, WHO has a compendium of innovative health technologies for low-resource settings available here: https://www.who.int/medical_devices/publications/compendium_2016_2017/en/

This Compendium illustrates some innovative health technologies that are in the pipeline (29) and others that are available (39), that can empower health care workers and support people and patients to have a healthier life.

All innovative solutions in the Compendium are presented in one page summarizing the health problem addressed, the proposed solution and product specifications, based on data, information, and images provided by the developers of the technologies concerned.

The selection was done from 562 submissions and 112 evaluations for the most recent call.