

Supplementary Table 1 Analysis of the Horizon Europe Research and Innovation Framework in terms of Global Healthⁱ

Themes	Analysis of the Horizon Europe Framework adopted by the EU Parliament in April 2019	Comments and Recommendations by European Global Health Researchers
Overarching Issues of the Research and Innovation (R&I) Framework		
Global Health and the Sustainable Development Goals (SDG) Framework	<ul style="list-style-type: none"> Global challenges and the United Nations SDG Framework are referred to in the documents. Compared to the initial proposal (21-24), 12 additional references to SDGs are mentioned in the text (27,28), yet the health cluster continues to be linked to SDGs 3 and 13 only (27). 'Global Health' is now mentioned three times as compared to only once in the agricultural cluster in the initial proposal (22). References to Global Health in the health and agricultural cluster (27) are linked to a One Health approach. A third 	<ul style="list-style-type: none"> We welcome more visibility of the SDG Framework in the final version of the Horizon Europe Framework, yet 'health' needs to be linked to all 17 SDGs. We also welcome reference to health challenges which require "multidisciplinary, technical and non-technical, cross-sectorial and transnational collaborations" (22,27). While we appreciate more mention of the term 'Global Health' and the strengthening of a One Health approach, the visibility as well as references to the meaning of Global Health should be more prominent in future EU research and innovation frameworks.

ⁱThis analysis of the Horizon Europe Framework is divided into overarching themes which refer to the entire framework, and health cluster issues which refer to pillar 2 of the framework. For some related themes such as EDCTP, literature beyond the EU Decision and Regulation Documents of the Horizon Europe Framework was consulted; references are provided. The left column refers to themes identified as pertinent for Global Health during the Brussels Meeting in July 2018 by European Global Health Researchers, see Introduction. The middle column takes the evolution of the Horizon Europe Framework into account and analyses the version adopted by the EU in April 2019 (27,28) as well as the initial proposal put forward by the European Commission in June 2018(21-24) in order to see, if substantial changes have occurred in the negotiating process. The third column, comments and recommendations, refers to the assessment and recommendations from a Global Health point of view by the above mentioned group of European Global Health researchers.

	<p>mention in relation to partnerships (28) is supportive of global research networks.</p>	
<p>Lower- and Middle- Income Countries (LMICs)</p>	<ul style="list-style-type: none"> • LMICs continue to be mentioned only once in connection with infectious diseases (27). While Horizon 2020 and Horizon Europe subscribe to an “open to the world” policy (53), compared to the previous framework (FP7), LMIC participation declined by 30% in Horizon 2020 (46). • The Joint Research Centre proposes to collaborate “with the best organizations world-wide, and with international, national and regional experts and stakeholders” (22,27). While international stakeholders are mentioned, LMICs do not seem to be included. 	<ul style="list-style-type: none"> • In line with the SDGs agreed upon by all UN member states in 2015 (29) and the EU’s own “open to the world” policy, the important role of LMICs for Global Health in terms of R&I should in future be mentioned throughout the Framework and the access of LMICs to research grants facilitated through dedicated calls or Global Health topics. • The Joint Research Centre should mention explicitly that research centres from LMICs are sought-after partners.
<p>Funding for Global Health R&I</p>	<ul style="list-style-type: none"> • EU funding for R&I plays an important role for European research institutes with a third of the budget going to European universitiesⁱⁱ; for LMICs the funding dropped considerably, see theme ‘LMICs’ above. • The European Parliament proposed to increase the Horizon Europe budget to 120 bn. Yet, the allocation of 8% to health 	<ul style="list-style-type: none"> • We welcome EU funding for European research institutes, yet access by LMIC institutes needs to be improved, see theme ‘LMICs’ above. • With increasingly complex Global Health challenges, R&I budget allocations to health research should constitute at

ⁱⁱ <https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/PbZJnb/state/analysis>

	has remained the same as in the initial proposal (44) marking a 2% decline for the health cluster compared to Horizon 2020 (9.7%) (34).	least 10% of the overall R&I budget, and Global Health Research should become more prominent within health research.
European & De-veloping Countries Clinical Trials Partnership (EDCTP)	<ul style="list-style-type: none"> The current EDCTP programme is supported through Horizon 2020 and represents an equitable partnership between African and European research institutes on joint medical research, mainly related to poverty-related and neglected diseases (PRND) (64,65). Over 60% of the grants support research by African institutions (63). While EDCTP is not specifically mentioned in the Horizon Europe documents, the fact that Global Health has been proposed as a topic for partnerships (28) will facilitate separate negotiations on the successor programme of the current EDCTP programme. 	<ul style="list-style-type: none"> EDCTP has been a flagship for equitable European-African partnership in research and innovation on PRND. A successor program will need to be strengthened through increased political and financial commitment. An expansion beyond PRND product research to health systems strengthening as well as a widening of the geographic scope of EDCTP should be considered for the successor programme.
Funding for Poverty-Related and Neglected Diseases (PRND)	<ul style="list-style-type: none"> With insufficient private sector research investment for PRND and antimicrobials (58), the EU plays an important role as a major public funder in this area (60,52). The Innovative Medicines Initiative is Europe's largest public-private partnership, co-directed by European pharma 	<ul style="list-style-type: none"> We welcome the EU's funding role in terms of antimicrobials and PRND. More public and private investment for R&I is needed in this regard, also to end the epidemics of AIDS and TB. The Innovative Medicines Initiative should facilitate greater participation and leadership of LMICs. Rather than pursuing an industrial lead in the research agenda, health priorities should be decided upon with LMIC research institutes and

and Anti-microbials	companies. ⁱⁱⁱ Insufficient funding for small and medium enterprises (SME) within the Innovative Medicines Initiative is seen as a handicap which needs to be addressed (67).	more funding allocated to SMEs and research institutes for phase II and III studies for novel antimicrobials.
Industrial Competitiveness and Economic Growth	<ul style="list-style-type: none"> Horizon Europe depicts research and innovation as “key drivers of sustainable growth and industrial competitiveness” (27) and “Europe's economic progress” as hinging on “its ability to innovate” (27) with an ‘innovation principle’ incorporated into Horizon Europe (27) thus giving prominence to industrial interests. 	<ul style="list-style-type: none"> We view the primary output of R&I in health as its contribution to sustainable and affordable health for all, not economic growth. Industrial interests and those of access to affordable and needed medicines might be opposed, and the ‘innovation principle’ is likely to undermine the ‘precautionary principle’ while strengthening industrial interests.
Network and Widening Participation	<ul style="list-style-type: none"> Networking and widening participation with a focus on improving the R&I situation in European countries are considered important (27), yet international cooperation and networking are also mentioned several times in the Horizon Europe documents (27). EU funding for setting up R&I networks is specifically mentioned (28), yet seems to refer to the European Research Area. 	<ul style="list-style-type: none"> While we welcome the focus on widening participation and networking and including international cooperation as well as the EU’s support for R&I networks, it will be important to widen networking beyond Europe and to engage global partners on equal terms in order to produce sustainable global solutions for health. Like EDCTP, networks should have governance structures based on equity between HICs and LMICs.
Pillar 2: Priority Intervention Areas in the Health Cluster		
Infectious Diseases	<ul style="list-style-type: none"> Infectious diseases are named as one intervention area in the health cluster, yet are mainly seen in terms of “protecting 	<ul style="list-style-type: none"> It is commendable to list infectious diseases as an own intervention area because of their great importance globally

ⁱⁱⁱ <https://www.imi.europa.eu/news-eventspress-releases/open-access-drug-development-tools-feature-new-imi-call-proposals>

including PRNDs	<p>people against cross-border health threats” with improved EU and international collaboration (27) rather than dealing with infectious diseases globally.</p> <ul style="list-style-type: none"> • The approved document by the European Parliament adds PRND to the title of the intervention area thus making PRND an integral part of all infectious disease interventions (27). PRND were not mentioned in the initial proposal in which only tropical diseases had been named in connection with LMICs and infectious diseases (22). The close relationship between PRND and antimicrobial resistance (AMR) is now also addressed. 	<p>(particularly in LMICs), an unfinished Millennium Development Goals (MDG) agenda and increasing threat of AMR, yet the focus should be global.</p> <ul style="list-style-type: none"> • We welcome the inclusion of PRND as an integral part of infectious diseases. Due to its close link to AMR, PRND could also be considered as a mission topic to ensure progress regarding needed medical products and diagnostics.
Non-Communicable Diseases (NCDs)	<ul style="list-style-type: none"> • In line with the global importance of NCDs (29,49), Horizon Europe acknowledges NCDs as a priority intervention area (27), yet LMICs are not mentioned in this context. • Grouping NCDs (affecting millions) with rare diseases (affecting few) in the same intervention area (22,27) seems unusual from a Global Health point of view. 	<ul style="list-style-type: none"> • While we welcome a specific intervention area on NCDs in Horizon Europe, LMICs should be explicitly included in the context of NCDs in future frameworks. • From a Global Health and public health point of view, we propose a greater focus on NCDs compared to rare diseases.
Tools and Technologies	<ul style="list-style-type: none"> • While cost-effective tools (22,27) and using synergies for cost-effectiveness are mentioned (28), frugal or cost-effective innovations for health care are not explicitly stated in the 	<ul style="list-style-type: none"> • Horizon Europe should support cost-effective innovations in terms of diagnostics, medicinal products, digital health and organisation of health care as an economically viable way to enhance the sustainability of health and health care globally.

	Horizon Europe Framework (27,28), despite European countries struggling with high prices of medicinal products.	
Health Care Systems	<ul style="list-style-type: none"> Horizon Europe states the strengthening of health care systems in terms of accessibility, safety, security, cost-effectiveness, resilience and sustainability in the European context (22,27), yet makes no mention of supporting implementation science to improve health systems globally. 	<ul style="list-style-type: none"> In line with the concept of universal health coverage in SDG 3 (29), the strengthening of health care systems and lessons learnt through implementation science should be pursued and shared globally rather than being restricted to EU member states.
Environmental & Social Health Determinants	<ul style="list-style-type: none"> 'Environmental and social health determinants' are listed as an intervention area thus recognizing their importance (27,28), yet no further mention of health determinants and no linkage to health and trade policies is made anywhere else in the Framework. 	<ul style="list-style-type: none"> A more comprehensive and global view of health would mention environmental and social health determinants in other clusters, such as climate and food, and ensure that health determinants play a role at EU policy level as well.
Missing Topics	<ul style="list-style-type: none"> Compared with the initial proposal, mental health has been incorporated with regard to adolescent health (27) and trauma addressed; yet, trauma appears in the civil security rather than the health cluster (27). Equity with respect to health determinants, service access and health outcomes has not been incorporated into the Framework. 	<ul style="list-style-type: none"> Future R&I Frameworks should be more inclusive of health research topics which are gaining importance globally such as mental health and trauma and should emphasize health equity.