

NOTES from the Second meeting of the ESSENCE Mechanism: “Increasing Effectiveness and Equity in Strengthening Health Research Capacity using Data and Metrics”

1-2 November 2021

15:00 – 17:00 (Central European time (UTC/GMT +2:00))

1. Background

This is the second meeting of the ESSENCE Mechanism for review of investments in research capacity strengthening in low- and middle-income countries (LMICs), which includes an agreement to periodically convene global funders and stakeholders to review investments, identify gaps and make future plans in order to enhance coordination and collaboration.

Background documents and presentation slides are enclosed to these notes.

2. Participating members

Moderators: Peter Kilmarx, Co-Chair, ESSENCE WGRI¹, FIC/NIH; Thabi Maitin, Co-Chair ESSENCE, Co-Chair, WGRI, SAMRC; Garry Aslanyan, WHO/TDR, Coordinator, ESSENCE Secretariat; Linda Kupfer, Co-Chair ESSENCE, FIC/NIH.

Participants:

- ESSENCE members/observers and other funders of health research capacity (HRC) building in LMICs.
- Global, regional, and national stakeholders in health research and capacity building in LMICs including governments, non-governmental organizations, academia, and the private sector.

The detailed agenda, list of participants and photo de famille are available in Annexes 1, 2 and 3.

3. Keynote address and presentations on ESSENCE and WGRI background – Peter Kilmarx; Thabi Maitin; Soumya Swaminathan, *Chief Scientist, WHO*.

- Participants were welcomed and the objectives of the meeting including background information on both [ESSENCE](#) and WGRI presented, as well as the basic sets of metrics developed for national health research capacity and the assessment of different models of coordination and collaboration through a deeper dive into eight selected countries.
- An overview of the established framework for the ESSENCE [Mechanism](#), the main outcomes of past stakeholder engagements that included diverse representation by geography, country income level and the public sector philanthropy were briefly presented; as well as the genesis of the work of ESSENCE from the World Bank in CEPI² [‘Money and Microbes’](#) report, which established that clinical research capacity should be considered as an essential element of pandemic preparedness.

¹ [ESSENCE Working Group on Review of Investments](#) (WGRI)

² Coalition for Epidemic Preparedness Innovations (CEPI)

- During the keynote address, concerns were raised over the challenges that countries are facing involving coordination within countries and globally, which products to prioritize for clinical trials, and ultimately what funders of research desire, i.e. countries ability to respond to health threat or an emergency.
 - The following areas were highlighted for ESSENCE to be reflecting on lessons learned and advocating for change:
 - Country-level research ownership and equity in health research and access to diagnostics.
 - Tracking of clinical trials for drugs and vaccines.
 - Collaborations at different levels of research competency, infrastructure and resources.
 - Engagement with public health authorities and health policy decision makers.
 - Regulatory capacity and ethical review capacity in terms of conducting research.
 - Advances in open data and science, i.e. rapid, open and timely sharing of data in relation to the benefits of access to health products and technologies.
 - Targeted investment in the future into building regional networks with common priorities.
4. Session on ESSENCE WGRI National Health Research Capacity Metrics Updated for 2021, and Updates on WHO Global Observatory for Health R&D and the WorldReport – **Janelle Cruz**, *FIC/NIH*; **Taghreed Adam**, *WHO*; **Michael Cheetham**, *NIH*.
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Following the presentations on the 2021 update of the analysis of the country-level health research capacity (HRC) metrics developed for ESSENCE to gain a better sense of the range and difference amongst measures of HRC, as well as the updates on the work of WHO [Global Observatory on R&D](#) on a harmonized set of indicators to measure national health research systems, and [World Report](#), the following points were raised in the discussion:

- Capturing country funding from authorities and local philanthropic organizations would be useful.
 - While the analysis of the country level HRC was limited to only publicly available data which does not account for individual country context, the next step will require developing a more comprehensive measures of HRC through engaging further dialogue with country representatives.
 - ESSENCE will help provide input into what the best metrics could be from funders perspectives. For more on the metrics developed by ESSENCE WGRI contact peter.kilmarx@nih.gov and janellecruz@nih.gov, or aslanyang@who.int, Coordinator, ESSENCE Secretariat.
 - The work of WHO Global Observatory as one of Money and Microbes recommendations that metrics for measuring the national HRC should be articulated by a global normative body that funders can follow.
 - Attendees should reach out to michael.cheetham@nih.gov if interested in a longer discussion around iSearch development and iSearch analytics discussed at this meeting.
 - On the unique and unified set of metrics that are been developed by the six WHO regions with the overall approach to agree on a core set of indicators that all countries would see value in, participants should contact adamt@who.int.
 - The presentation slides about the established framework for the ESSENCE Mechanism whereby funders would use data from the WHO Global Observatory on R&D and from the World Report to help guide their activities to make the greatest impact are annexed to these notes.
5. Presentations and discussion on Health Research Capacity (DAY 1)
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Session on [Health Research Capacity Metrics in Global Health Security Agenda \(GHSA\) new R&D Task Force](#) – **Jamie Bay Nishi**, *Global Health Technologies Coalition (GHTC)*; and *Engaging Health Research Capacity in the COVID-19 response* - **Ana Maria Henao Restrepo**, *WHO*

- **Jamie Bay Nishi** presented on GHSA's dialogue focused on end-to-end product development, i.e. biomedical research, advancing drugs, vaccines diagnostics and other medical technologies; and what metrics are desired for alignment moving from preclinical research through to manufacturing and delivery. The key points raised in the presentation:
 - The Task Force is closely monitoring the work of ESSENCE as a starting point for metrics for R&D capacity, although yet to see policymakers and leaders take up the data and incorporate

it in a meaningful way. Questions about the work and agenda of GHSA and how the Task Force is driving the effort should be directed to jnishi@ghcoalition.org.

- While more concrete metrics are needed specially on clinical trials and medical countermeasures, GHSA as policy and advocacy organization will help elevate the work of ESSENCE and translate it into other multilateral and global discussions about the future of R&D ecosystem.
- **Ana Maria Henao Restrepo** discussed key issues identified on engaging HRC in the covid-19 response. These are more specifically that clinical research should be part of any action in public health, be integrated into response activities, and that global coordination should be a structure for monitoring and evaluation, as well as for political alignment.
 - The critical goals from the global research and innovation plan of action critical to the dialogue on data and metrics discussed include the plan to facilitate research and innovation for the pandemic, support the development of global research platforms and build on the collective knowledge; and ensure that countries do better in future outbreak or pandemic and research in general. For more on the work of the [R&D Blueprint team](#), contact henaorestrepa@who.int.
 - While WHO is engaging the lessons learned from COVID-19 with communities, regional offices and Member States, it is useful to continue to align what the work of data and metrics is with other policymakers and vehicles, as well as follow opportunities whether public or privately funded.

6. Key note address, presentations and discussion (DAY 2)

- a. Best practices and lessons learned building health research capacity in Africa – **Jean Nachega**, *University of Pittsburgh / Johns Hopkins University United States; Stellenbosch University, SA*.
- **Jean Nachega** focused on the best practices and lessons learned building HRC in Africa drawing lessons from SACORE (Southern Africa Consortium for Research Excellence), one of the seven consortium funded by Wellcome with about £30 million for a five-year initiative. It was launched in 2009 to strengthen research capacity in Southern Africa. The lessons from SACORE include:
 - The project was impactful and led to the establishment of a research support center (RSC) which was missing or not functioning well in the countries.
 - The RSC offered an all-inclusive support in terms of pre, post and awards and implementation of research training; as well as regular mentorship networks developed during the transformational initiative to help other LMICs.
 - Soft partnership collaboration that resulted from the initiative in Malawi, Zimbabwe and Zambia were considered key and important because it made a huge difference in the way that the RSC became integrated into the university systems, and became a DEMO for sustainability.
- b. [Building the case for Investment in Health Science Research \(HSR\) in Africa](#) - **Rhona Mijumbi**, *Makerere University College of Health Sciences, Uganda*; **Catherine Jones**, *Department of Health Policy, London School of Economics and Political Science, United Kingdom*.
- **Rhona Mijumbi and Catherine Jones** discussed a wider systems perspective on national health research systems developed through a qualitative interview with 189 researchers and funders, decision makers and nine African countries from both Anglophone and Francophone Africa, and across all regions of the continent. Key highlights from their presentation include:
 - Other elements that were discovered during the analysis on the measurement of HSR different from the four pillars necessary to produce and use scientific knowledge, e.g. political will, research leadership, regulatory environment and research culture which serves to provide some linkage.
 - The issue of collaboration which is key for ESSENCE and critical in terms of creating opportunities and funding for more research especially when used in tandem and partnership with efforts to build a research culture and working with research leaders locally.

- The need for researchers to include a variety of national stakeholders in any efforts around modelling the framework in countries, as well as the need to consider the coordination of different external funders on the ground, in particular, the leadership of the process.
- c. Modelling the ESSENCE Mechanism using data, coordination and collaboration to fill gaps in LMICs - **Martin Eigbike**, WGR Consultant, Nigeria; **Irini Pantelidou**, Wellcome, United Kingdom.
 - Both speakers provided updates on the objective of the mechanism which is to facilitate productive engagement between in-country stakeholders and funders, and collaborate and coordinate efforts to address gaps and national HRC in countries.
 - The work done post the [inaugural meeting of the mechanism in 2020](#), and the ongoing data and analysis, as well as the process of data collection aiming to determine the top one or two countries where it would be feasible in a short term to model the ESSENCE mechanism.
 - Have considered a number of metrics and the challenges in terms of what metrics work, as well as working to ensure ESSENCE gets the right value from the use of the metrics. The presentation slides are annexed to these notes.
 - Participants who could help figure out what effective coordination could look like in country for ESSENCE members looking to collaborate and do more work in a committed way or the cognitive elements that can help ESSENCE shape the thinking in terms of what should be the core and focus of the collaboration should contact kupferl@mail.nih.gov and martin.eigbike@outlook.com or aslanyang@who.int, Coordinator, ESSENCE Secretariat.

7. Case studies of health research capacity (HRC) building in LMICs

Session on [Leading a Consortium for Health Research Capacity Building in the West Indies](#): **John Lindo**, University of the West Indies, Jamaica; Research Capacity Building in West and Central Africa: **Oumar Gaye**, Cheikh Anta Diop University, Senegal; and Health Research Capacity Strengthening in Bangladesh: **Malabika Sarker**, BRAC University, Bangladesh.

- **John Lindo** discussed the current efforts in the West Indies looking through the lens of the research consortium from the University of Buffalo, and how working with the minister of health and engaging them early is very important since they determine policies across the region.
- **Oumar Gaye** presented key insights and experience from the West and Central Africa. There is priority for cancer research intervention in Africa, developing human capacity and good research environment to have strong financing mechanism or strong funding mechanism, and strengthening the regulatory system.
- **Malabika Sarker** shared thoughts on what the issues and challenges were in Bangladesh on HRC building, while highlighting that there is currently no systematic approach or national research strategy in the country, although research is a priority for the government unlike in the past when the focus was on implementation.

The following issues were raised in the discussion:

- Funders should set aside some percentage of resources to further develop leadership within these countries to ensure some balance in equity, and also making resources available to other institutions in other countries that really have weak research systems.
- How funders/research community can capture the whole circle of research and the different output to help them engage freely with policy makers who have little knowledge about what is going on. A key capacity for funders to focus on, based on the different dynamics of collaboration with governments, to help elevate the profile of the research institutions, collaboration with funders and/or a platform like ESSENCE.
- Questions around what are the challenges of not having an effective national plan in the countries and what is needed to help address the countries tactical goals were raised. The following were identified:
 - *West Indies*: A real coordinated mechanism focussed on research capacity building; more training to help the consortium move from a paradigm of depending on central government for

- funding; and fund raising for infrastructure to start the research office rather than just building research capacity.
- *Senegal*: Funding to improve the consortium's support office in the different institution and to set platform laboratories at each site; and the need to coordinate more between scientist research institutions to working closely with the ministry of health.
- *Bangladesh*: (1) Building the research capacity of the whole country instead of a few elite institutions who have an excellent long term partnership with the Northern institutes, (2) Having an orientation of the research capacity component needed in writing a research proposal, funding to develop infrastructure and do needs assessment, and ethical review which is another aspect of research that is missing, (3) Developing leadership within the country and the elite institute who are able to generate funding and international collaboration to expand their capacity.

8. Key take-aways from the thematic dialogue on health research capacity

- The overall approach of the meeting revealed a focus on the following themes echoed throughout the two days:
 - The importance of research support centers which is a good lesson for investment from Wellcome Trust for others to learn from.
 - Language barrier challenges with Francophone countries that is seen as a big gap between West, Central and Southern Africa.
 - The importance of South-South networks to boost African research capacity.
 - Increasing support that comes from government and how important that function is.
 - The issues with metrics and having to dig deeper behind numbers of publications or patents as quantitative indicators like counts of people, publications or institutions can give appearance of neutrality.
 - Conversations about national health research strategies and the core elements, as well as the significance to the regulatory environments.
 - Importance of collaboration among the different elements discussed at this meeting and having to probe further into looking at the long term local leadership of the research enterprise.
 - The importance of engaging with the national stakeholders early on in the process as they mostly determine policies across regions.

9. Final remarks and next steps

- All the presenters made very good points in terms of where to focus, what things play out on the ground and what some current indicators or metrics actually indicate; what the issues and challenges are for the various initiatives and countries, and how ESSENCE move forward with the mechanism.
- The three country presentation examples revealed great diversity with focus on infectious diseases and non communicable diseases, and from the different regions, the core elements that relates to what the needs were and what the challenges were.
- The countries expectation around the issue of supporting career pathways for researchers, developing leadership within countries, funding to develop infrastructure and conduct needs assessment, and ethical review, another aspect of research that is lacking.
- The argument for engaging with government and other key stakeholders which is mostly to show impact in terms of health, e.g. the hint of how with the research being done, malaria is declining in the region which is an exemplar of the importance of that linkage.
- To what extent Institutional Review Boards (IRBs) in countries are prepared to skilfully review innovations, implementation research, health systems and services research, or intersectional proposals. Is there a burning need to bolster IRB capacities in dealing with new types of research especially in the growing fields of health systems and public health research and innovations?

- The need for more concrete metrics specially on clinical trials and medical countermeasures so countries are able to assess things for themselves, and see what is missing in relation to building a stronger research capacity and advancing health and development.
- Emphasis on the establishment of coordinating centers that may qualify themselves as centers that could receive funding from external funders to national universities or institutions. This is based on the current problem created by AAS / AESA platform programmes on disbursing funding to African institutions.

NEXT STEPS:

- ESSENCE will move forward with modelling the mechanism in some selected countries; finalize the metrics for 2021 and make sure they are available, as well as improve data and data availability for the work of ESSENCE.
- Will consider holding a bigger meeting in 2022 to gather more input and perhaps through an abstract process as a fairly and unique opportunity for funders and stakeholders in health research capacity building to be able to interact.

Annex 1: **AGENDA**

MONDAY, 1 NOVEMBER

[Join Zoom meeting](#)
Passcode: ESSENCE-21

14:55 | Participants to connect at least 5 minutes in advance.

***Moderator:** Peter Kilmarx, FIC/NIH

15:00	1. Welcome
	<p>Item time: 10 minutes each</p> <ul style="list-style-type: none"> ▪ Welcome and background on ESSENCE: Thabi Maitin ▪ Welcome and background on WGRI: Peter Kilmarx
15:20	2. Keynote: <i>Building Global Capacity for Research for Health</i> <ul style="list-style-type: none"> ▪ Soumya Swaminathan, Chief Scientist, World Health Organization
15:35	3. <i>ESSENCE WGRI National Health Research Capacity Metrics Updated for 2021</i> <ul style="list-style-type: none"> ▪ Janelle Cruz, FIC/NIH
15:45	4. Updates <p>Item time: 5 minutes each</p> <ul style="list-style-type: none"> ▪ WHO Global Observatory for Health R&D – Taghreed Adam, WHO Research for Health Department ▪ World Report – Michael Cheetham, Office of Portfolio Analysis, NIH
15:55	Discussion/Q&A – 15 minutes
*Moderator: Thabi Maitin, SAMRC	
16:10	5. Presentations <p>Item time: 10 minutes each</p> <ul style="list-style-type: none"> ▪ Health Research Capacity Metrics in the Global Health Security Agenda (GHSA) new R&D Task Force: Jamie Bay Nishi, Global Health Technologies Coalition ▪ <i>Engaging health research capacity in the COVID-19 response</i>: Ana Maria Henao Restrepo, WHO
16:30	Discussion/Q&A – 20 minutes
16:50	Summary and closing remarks – Peter Kilmarx and Thabi Maitin
Adjourn at 17:00	

TUESDAY, 2 NOVEMBER

[Join Zoom meeting](#)
Passcode: ESSENCE-21

14:55 | Participants to connect at least 5 minutes in advance.

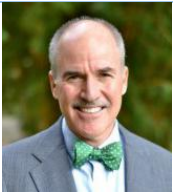







***Moderator:** Linda Kupfer, FIC/NIH








15:00	1. Welcome and overview of Day 2 – Linda Kupfer
15:10	2. Keynote: <i>Best Practices and Lessons Learned Building Health Research Capacity in Africa</i> <ul style="list-style-type: none"> ▪ Jean Nachega, University of Pittsburgh / Johns Hopkins University, United States; Stellenbosch University, South Africa
15:25	3. Building the Case for Investment in Health Science Research in Africa <ul style="list-style-type: none"> ▪ Rhona Mijumbi, Makerere University College of Health Sciences, Uganda ▪ Catherine Jones, Department of Health Policy, London School of Economics and Political Science, United Kingdom
15:35	4. <i>Modelling the ESSENCE Mechanism using data, coordination and collaboration to fill gaps in LMICs</i> <ul style="list-style-type: none"> ▪ Martin Eigbike, WGRI Consultant, Nigeria ▪ Irini Pantelidou, Wellcome, United Kingdom
15:45	Moderated Discussion – 15 minutes



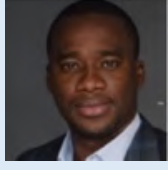





***Moderator:** Garry Aslanyan, WHO/TDR

16:00	5. Case studies of health research capacity building in LMICs Item time: 10 minutes each <ul style="list-style-type: none"> ▪ Leading a Consortium for Health Research Capacity Building in the West Indies: John Lindo, University of the West Indies, Jamaica ▪ <i>Research Capacity Building in West and Central Africa</i>: Oumar Gaye, Cheikh Anta Diop University, Senegal ▪ <i>Health Research Capacity Strengthening in Bangladesh</i>: Malabika Sarker, BRAC University, Bangladesh
16:30	Discussion/Q&A – 20 minutes
16:50	Summary and closing remarks – Peter Kilmarx and Thabi Maitin
Adjourn at 17:00	

Annex 2: **List of Participants**





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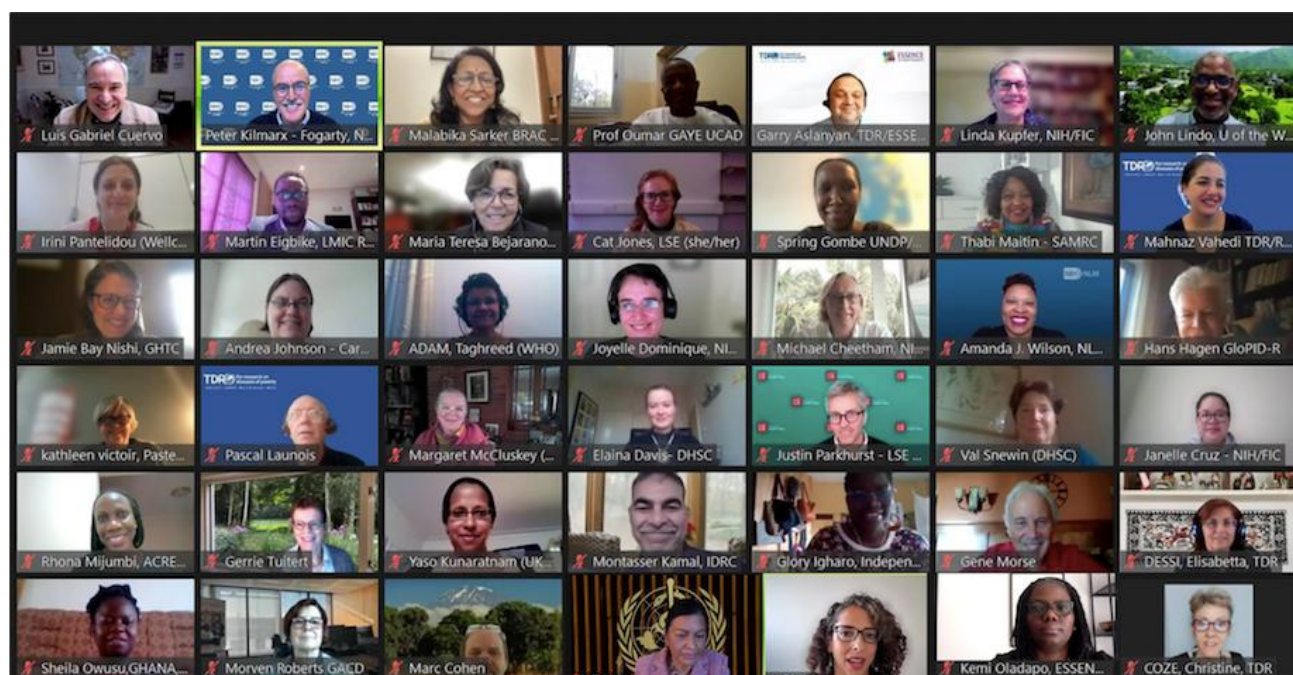
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Annex 3: Photo de famille



Analysis of ESSENCE WGRI National Health Research Capacity Metrics: 2021 Update

1 November 2021

Janelle Cruz, MPH, PMP

Management Analyst, Fogarty International Center, National Institutes of Health



Fogarty International Center

Purpose

- Analysis of measures of country-level health research capacity
 - Gain better understanding of range and differences
 - Assess how sub-indicators relate to one another
 - Assess health research capacity metric correlations with sociodemographic measures
- Help inform future directions for future health research capacity strengthening

Methods

- Review of countries with population > 100,000 (N = 180)
 - Zero or missing values for some sub-indicators for small countries
- Correlations:
 - Health research capacity sub-indicators correlated to one another
 - Aggregate capacity measure correlated with sociodemographic measures, e.g., population, GDP per capita, DALYs per capita
- Statistical test of correlation:
 - Kendall's tau correlation coefficient (test using ranks of data)

Sub-indicators for country-level health research capacity (updated)

Developed by the ESSENCE Working Group for Review of Investments – 2020

Indicator	Metric
Clinical trial capacity	Number of clinical trials registered in country from 2018-2020 (annual average) from the WHO International Clinical Trials Registry Platform
Capacity to attract funding for health/clinical research	Number of funded health/clinical research activities in country from 2018-2020 (annual average) from World RePORT
Capacity to produce research output in peer-reviewed journals	Number of scientific publications in Scopus from 2018-2020 (annual average), for which any listed author has an affiliation to the country
Capacity to provide advanced health research training	Number of higher education institutions providing doctoral degrees for key health disciplines as of 2019, from the World Higher Education Database

Aggregate measure of country-level health research capacity

- Average (mean) of percentile ranks of all four sub-indicators
- Higher aggregate measure = higher country-level research capacity
- For example: Aggregate measure for Germany = 0.97 (97th percentile);
Thailand = 0.89 (89th percentile)

Top 20 countries* with highest country-level health research capacity (Aggregate measure)

Country	Capacity Clin Trials	Capacity Intl Funding	Capacity Resch Output	Capacity Resch Training	Aggregate Measure
United States	10392	59194	345579	1486	1.00
China	10138	988	216876	583	0.99
Germany	3461	1603	81802	253	0.97
India	5791	611	50212	637	0.97
United Kingdom	2908	14558	98331	151	0.97
Japan	4750	580	62154	513	0.96
France	3361	943	52014	168	0.96
Canada	2169	9279	55632	100	0.95
Brazil	1441	604	35575	561	0.94
Australia	2320	1065	50398	55	0.93
Italy	1928	553	59361	86	0.92
Spain	2405	569	44494	77	0.92
Republic of Korea	1966	180	36142	191	0.92
Mexico	516	197	10310	540	0.89
Thailand	2119	277	7216	110	0.89
Netherlands	2032	739	34836	34	0.88
Poland	1192	95	17669	268	0.88
Russian Federation	813	80	17280	582	0.88
Belgium	1398	293	17895	42	0.87
Turkey	1213	56	20269	135	0.86

*LMIC are listed in **bold**

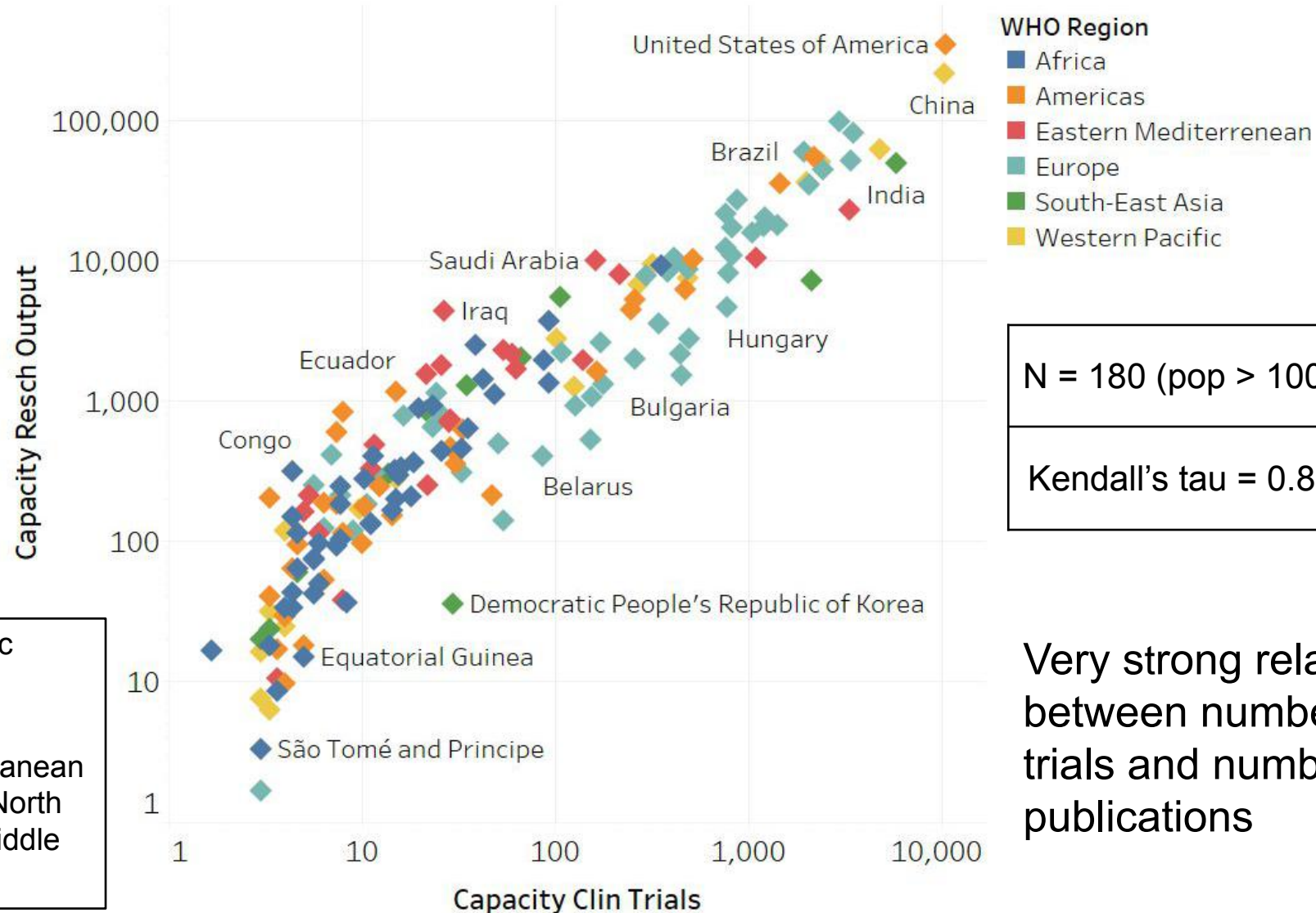
How the sub-indicators relate to each other: Kendall's tau

Kendall's tau for ESSENCE sub-indicators

	Capacity to attract funding for health/clinical research	Capacity to produce research output in peer-reviewed journals	Capacity to provide quality health research training
Clinical trial capacity	0.60	0.81	0.61
Capacity to attract funding for health/clinical research		0.62	0.50
Capacity to produce research output in peer-reviewed journals			0.61

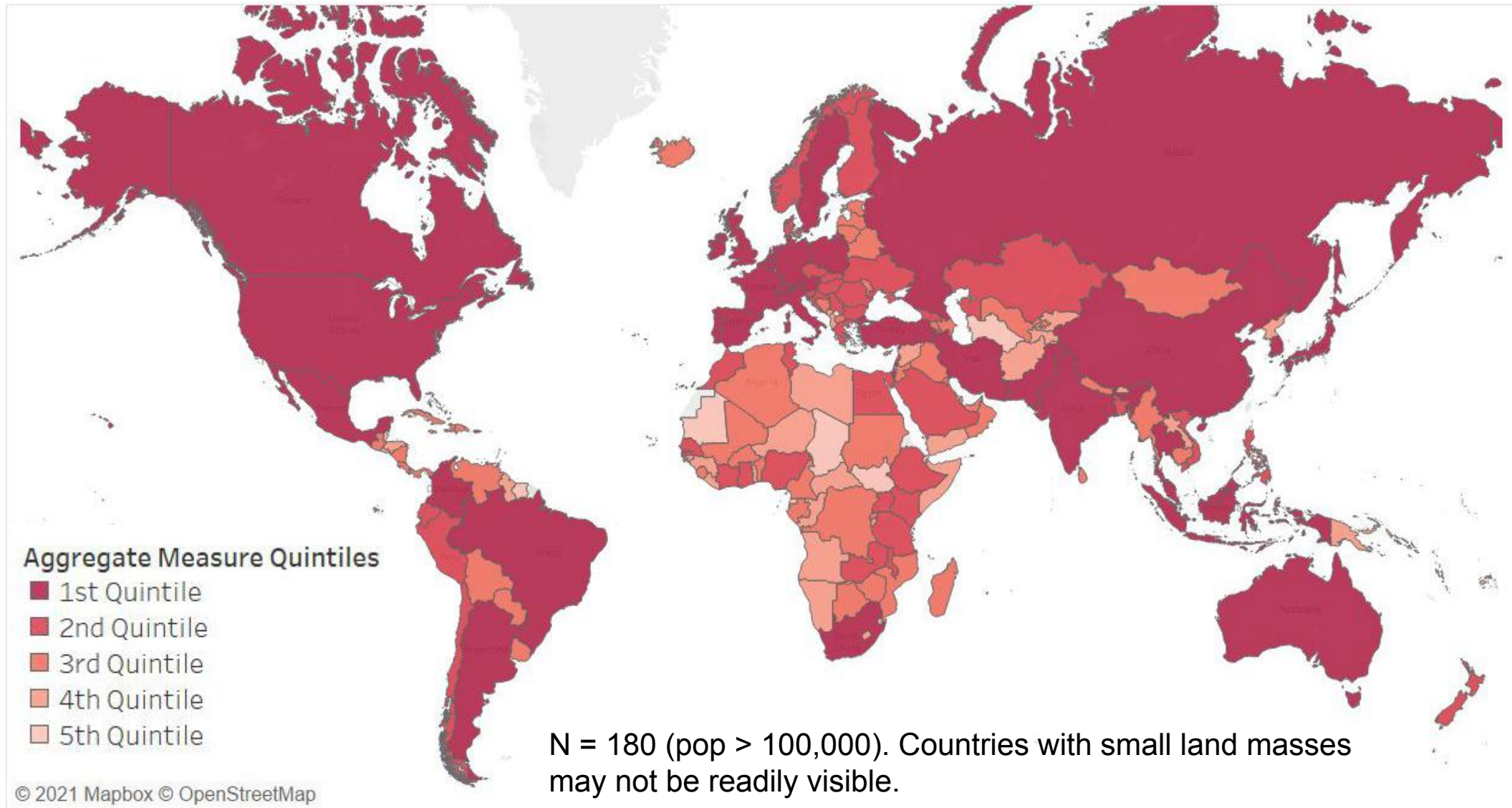
- Kendall's tau correlation test
 - Higher tau means stronger correlation
 - Tau values may range from -1 to +1
- Relatively strong correlation between the four sub-indicators
 - All positively related, all statistically significant
- Range of Kendall's tau values for sub-indicators – between 0.50 and 0.81
 - E.g., strong correlation between clinical trial capacity and research output (Kendall's tau = 0.81)

Example: Clinical trial capacity vs. Capacity to produce research output in peer-reviewed journals



Very strong relationship
between number of clinical
trials and number of
publications

Measure of country-level health research capacity (Aggregate measure)



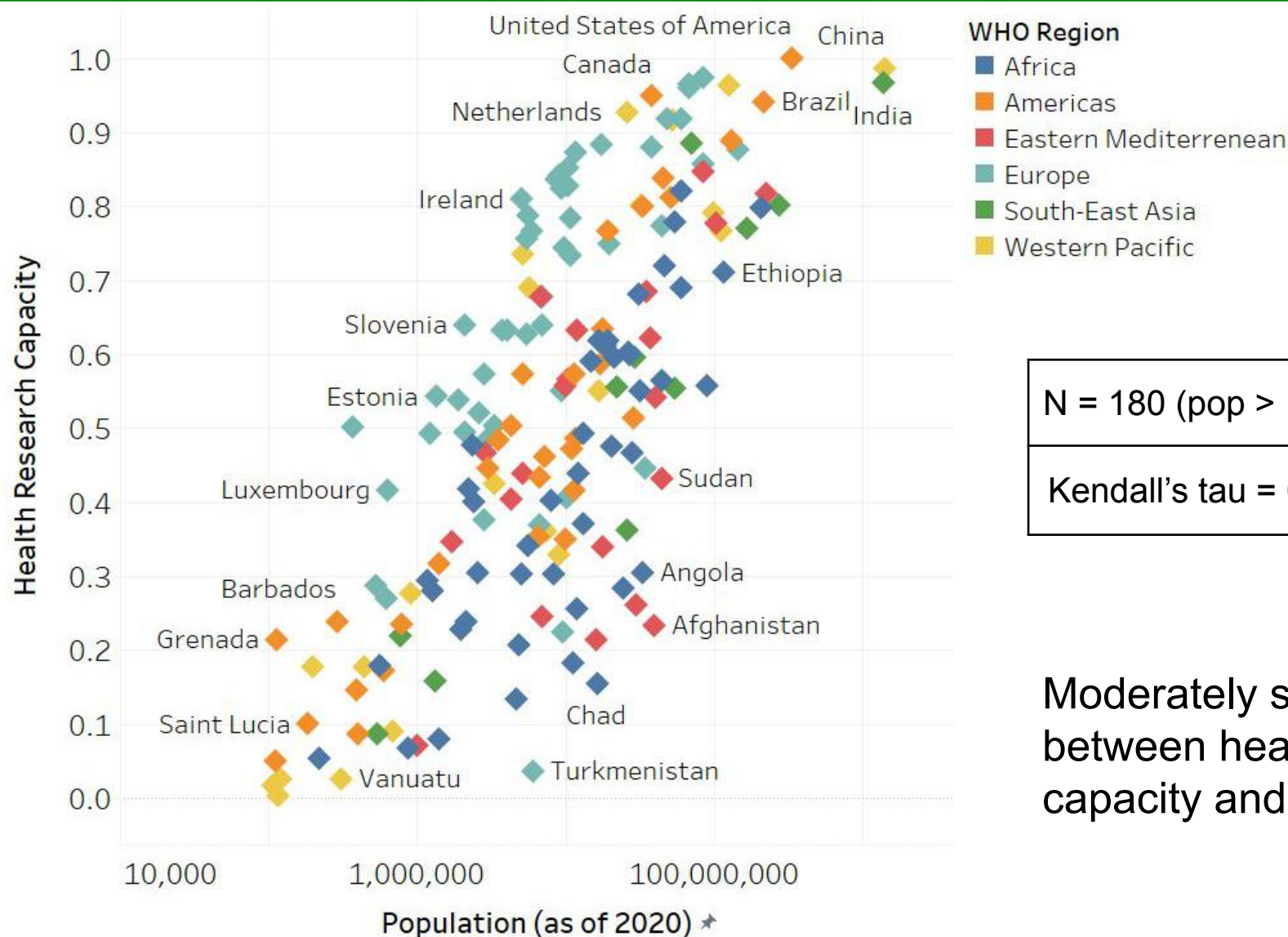
How the aggregate measure of health research capacity relates to country indicators: Kendall's tau

Kendall's tau for Aggregate measure vs. Country indicators

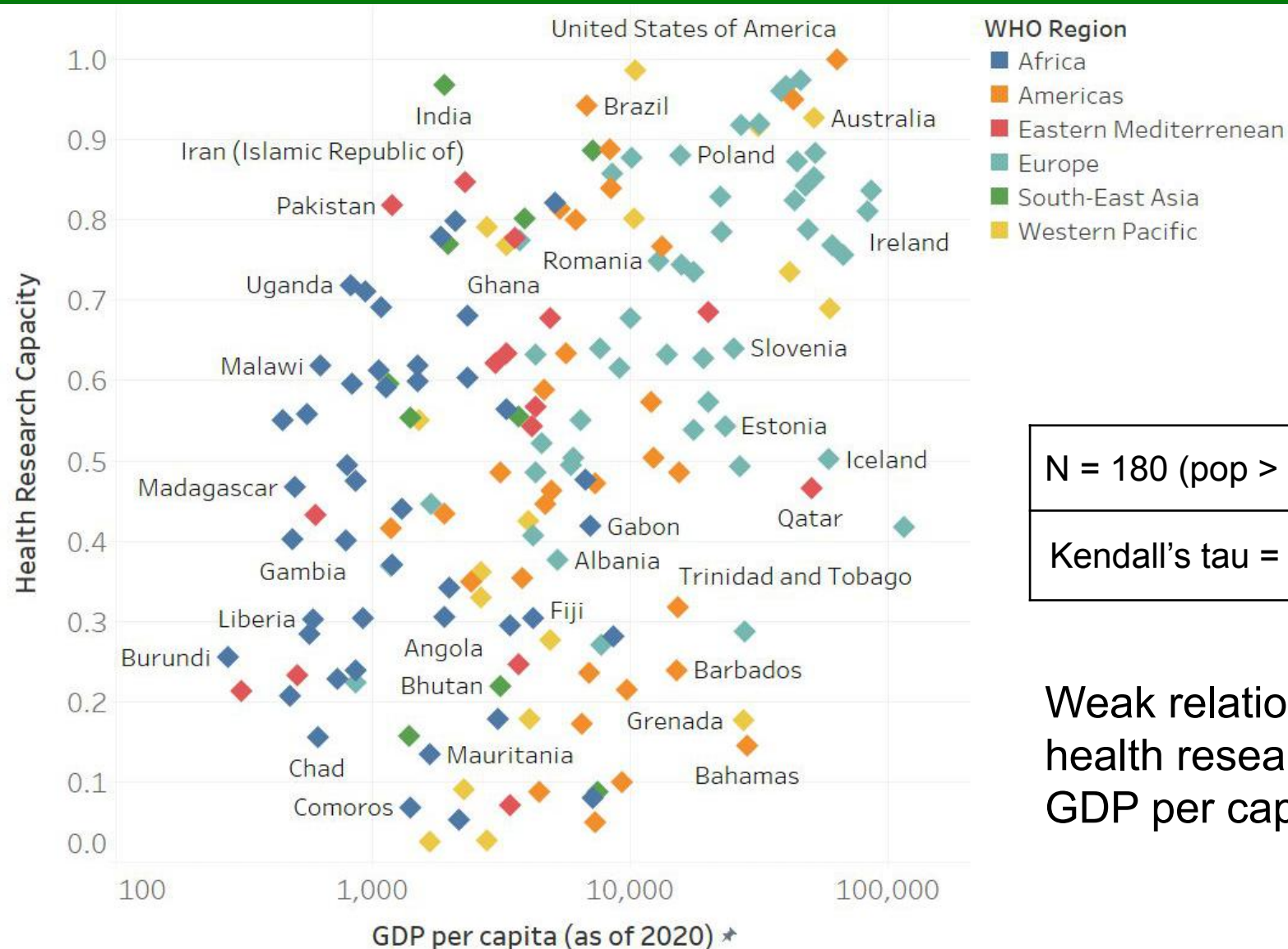
	Population	GDP, overall	GDP, per capita	Human Development Index (HDI)	DALYs per 1M pop
Aggregate measure	0.57	0.78	0.25	0.31	- 0.34

- Varied strengths of correlation between country-level research capacity and sociodemographic indicators
- Highest Kendall's tau – aggregate measure vs. GDP overall
- Lowest Kendall's tau absolute value – aggregate measure vs. GDP per capita

Measure of country-level health research capacity (aggregate measure) vs. Population



Measure of country-level health research capacity (aggregate measure) vs. GDP per capita



N = 180 (pop > 100,000)

Kendall's tau = 0.25

Weak relationship between health research capacity and GDP per capita

Note: Logarithmic scale for x-axis (GDP per capita).

Eastern Mediterranean region includes North Africa and the Middle East.

Limitations

- Limited to only widely available data
 - Other measures, such as research implementation, may be more salient but harder to capture
 - Does not reveal facilitators and barriers to strengthening health research capacity
- Availability of recent data for some sociodemographic measures
 - E.g., Most recent available data is 2007 for GDP overall and GDP per capita for certain small island nations
- Existing underlying factors may vary by country that affect aggregate measure
 - Need to engage with country representatives to assess research priorities, goals, facilitators, and barriers

Summary

- ESSENCE aggregate measure combines four sub-indicators to measure country-level health research capacity. Full updated results will be made available.
- Relatively strong correlation between sub-indicators suggests internal validity and reliability
- Wide range of research capacity in all geographic regions and country income levels
 - “Demography is not destiny”; good research capacity present in some smaller, less wealthy, less developed countries. Others can follow.



Next steps:

- Study high-capacity outliers for potential best practices in building research capacity
- Assess research priorities and address barriers in countries with lower capacity
- Develop more comprehensive measures of research capacity such as regulatory system, ethical review capacity, etc.

Thank You!

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Modelling the ESSENCE Mechanism for improving coordination and collaboration in LMIC research capacity strengthening

November 2021



Background

Modelling the ESSENCE Mechanism

Objective of the mechanism:

Facilitate productive engagement between *in-country stakeholders and funders* to collaborate and coordinate efforts to *address gaps in national health research capacity* in countries.

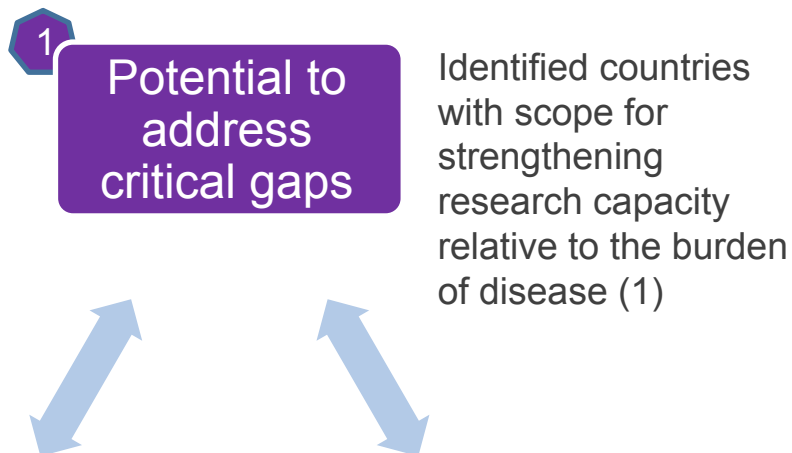
Purpose of modelling the mechanism:

- What would better coordination and collaboration look like? How would it work?
- The focus is on LMICs with low research capacity relative to health research need, and/or LMICs with high funder activity with significant opportunities for improved funder coordination.

Initial analysis to inform country focus

Approach/Methodology

Apply criteria to identify potential priority targets



Develop shortlist

25

Countries sufficiently satisfy all three criteria based on a broad definition of funder activity

16

Countries sufficiently satisfy all three criteria based on a narrower definition of funder activity (based on health programs considered relevant to potential collaborations)

Survey to ESSENCE members and affiliates

Seeking input to inform selection of one or two countries to model the mechanism of the 16 shortlisted.

- (1) Measured based on correlation between relative research capacity (per 2020 report) and DALY/per capita
- (2) Measured based on number of active funders/partners in-country.
- (3) Measured based on the presence of factors favorable to impactful collaboration and the absence of limiting factors

Key points of reflection following survey of ESSENCE Members

Modelling the ESSENCE Mechanism

Objectives of Survey

- To assess level of activity across the 16 countries
- Understand what LMIC countries ESSENCE members were interested in building collaborations in
- Assess what LMIC countries were likely to be more receptive based on disposition of national authorities
- Gather data on ongoing in-country developments to help shape thinking about possible synergies and/or collaborations

Three key points of reflection

1

How to accommodate differences in organisational/operating models of members in designing collaborative structures that can be effective at country-specific level

2

Navigating differences across funders in the correlation between levels of funder presence in a country vis-à-vis the degree of interest/feasibility in building collaborations in the country

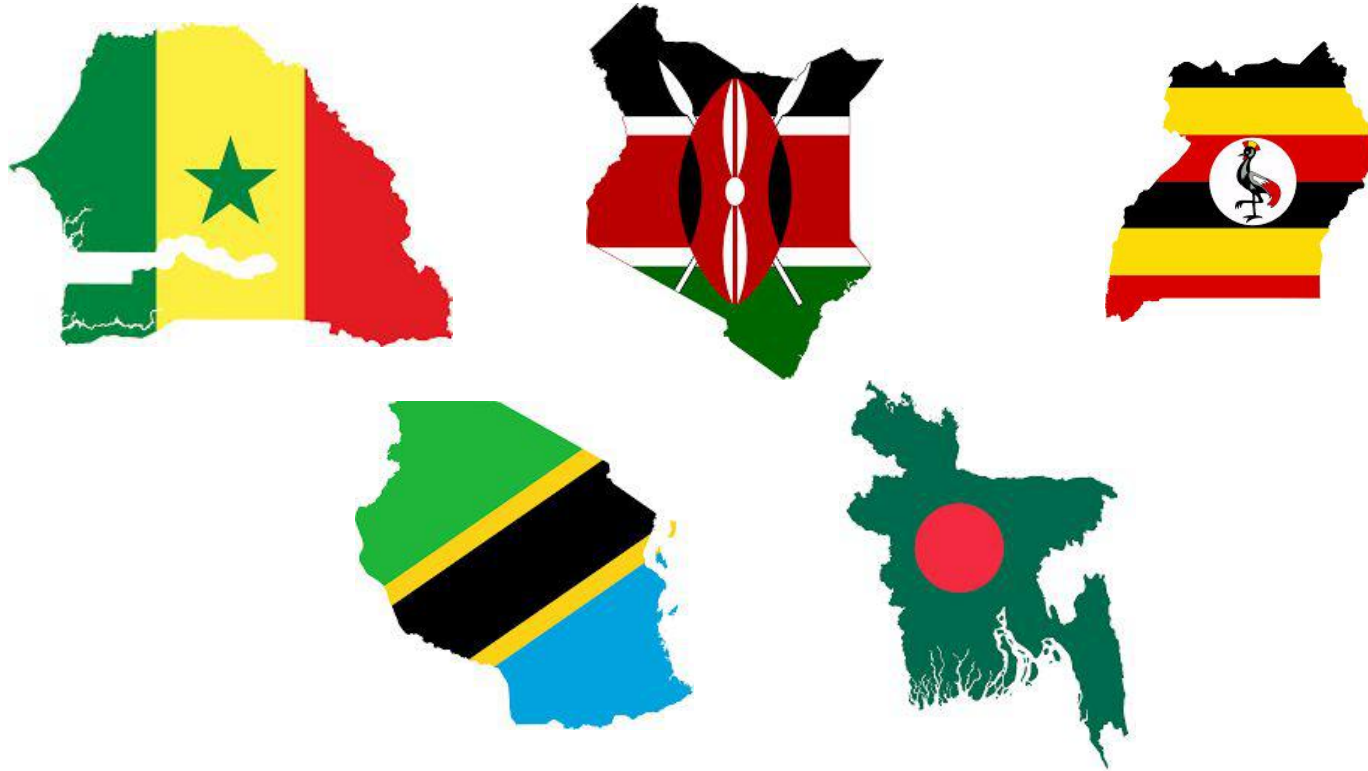
3

Solving for the absence of widely recognized/accepted means of assessing country disposition towards multi-stakeholder collaborations on capacity strengthening

Further analysis to identify potential country partners/platforms

Modelling the ESSENCE Mechanism

Five countries assessed as potential platforms



Additional countries included in analysis

Potential areas of focus based on country needs

- Multi-stakeholder co-ordination
- Information/data sharing and transparency on health research
- Central repository of health research data
- Dissemination of health research findings and use of research output
- Capacity building to address human resources for health research gaps
- Research Infrastructure
- Tailoring research towards national needs/national agenda

Next steps – what could a modelling initiative look like?

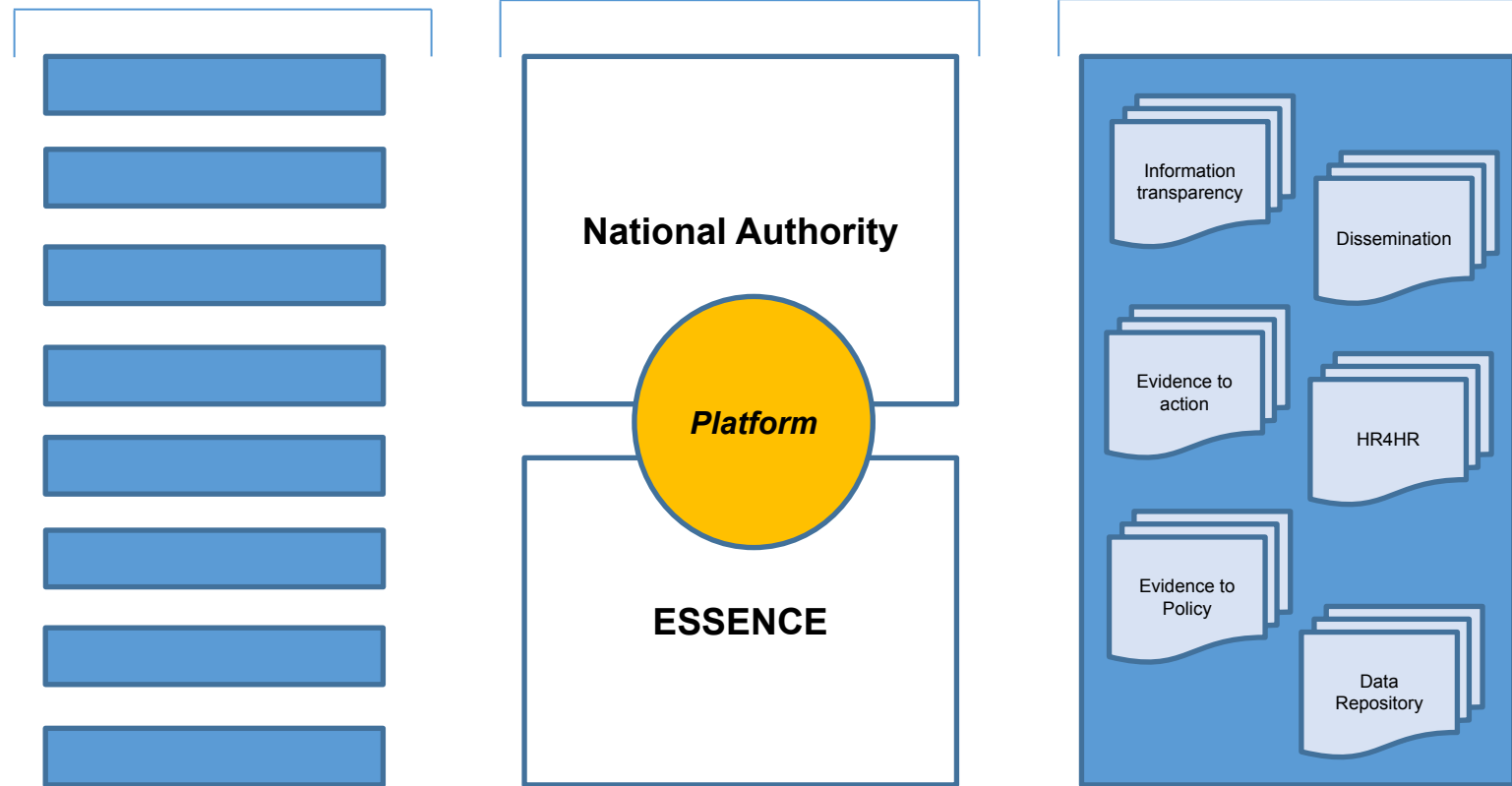
Modelling the ESSENCE Mechanism

High level conceptual framework

Participating partners

Coordination Mechanism

Thematic Focus Area(s)



Key considerations

- Flexibility of structure to allow for multi-stakeholder participation
- Flexibility of purpose to allow for in country ongoing work/programming to be effectively leveraged
- Flexibility of delivery platform to limit/minimize extra cost-burden from the collaboration
- Formal engagement with national health authority critical to ensure long term sustainability
- Focus thematic area to be determined by national priorities set by national authority

Thank you



ESSENCE
on Health Research



Developing harmonized indicators for global monitoring of National Health Research Systems (NHRS)

Taghreed Adam, MD, PhD

Emerging Tech, Research Prioritisation & Support Unit (EPS)
Research for Health Department, Science Division
World Health Organization, Geneva

1 November 2021

What is the Global Observatory on Health R&D?



- A comprehensive source for up-to-date global information and analysis on **health R&D**, including **resources, processes, outputs**.
- Supports evidence-informed decisions related to R&D gaps, funding and capacity.
- **Scope:** all health and health-related fields and all types of research
- **Target users:** Governments, policy-makers, funders, researchers.

New url: <https://www.who.int/observatories/global-observatory-on-health-research-and-development>

**Watch explainer video on
what the Observatory is and
what it includes:**

<https://bit.ly/3wbzeta>

Why developing NHRS indicators?

1. Opportunities:

1. Several WHO regions are in the process of developing metrics as requested by their Member States – *opportunity to consolidate and collaborate*
2. Increasing interest globally to coordinate investments on research and capacity strengthening -- *opportunity to improve and harmonize data and information sharing*

2. Overall approach:

1. Agree on a core set of indicators that all countries see value in collecting in a uniform way across countries, to monitor and report on globally
2. Start with what is available and feasible and keep expanding

What it is for?

1. Monitoring progress with national “health research systems” capacity over time; for all types of research --not only product development
2. Getting a “rough” idea of where countries are and where they are compared to others
3. Helping start discussions on what needs strengthening, what additional data to collect at country level

What it is not for?

1. In-depth understanding of what is happening at country level - this requires contextualized analysis and more complex data and processes.
2. Assessing impact of capacity development initiatives, e.g., institutional capacity or strength

Process and progress to date

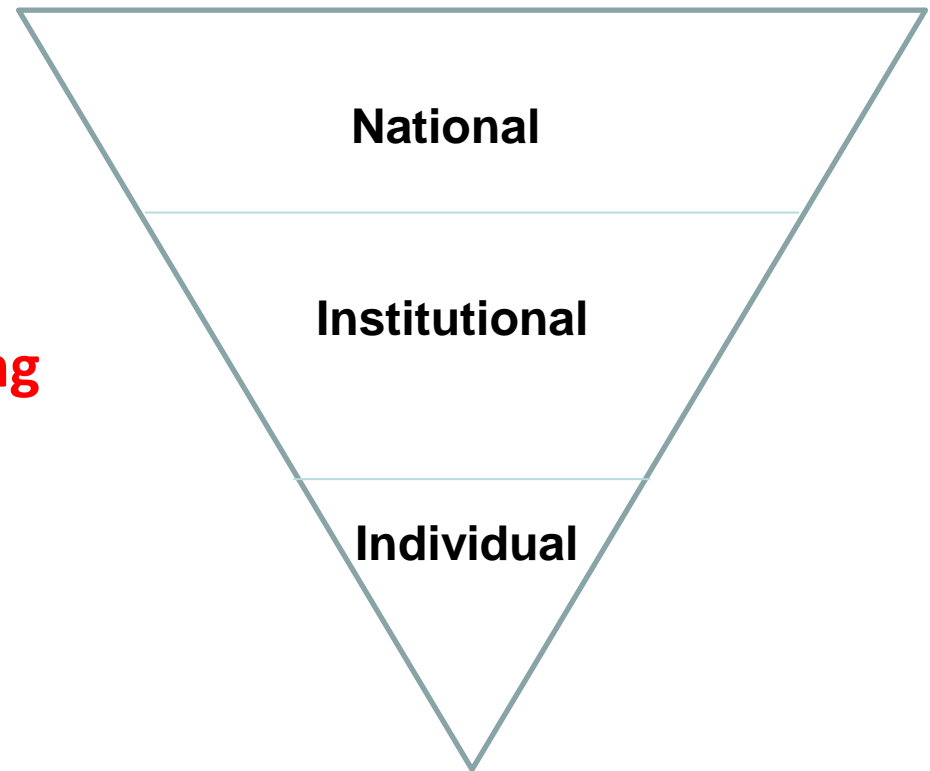
- **Process:** consultative and iterative process working with WHO regions
- **Content:** building on and refining earlier WHO work and framework for NHRS assessment (2004)
- **Indicators:** currently 22 being considered
- **Data collection:** 50% by WHO regions and 50% by the R&D Observatory; to be updated regularly
- **Expected output:** interactive dashboard allowing various ways to explore the data

Functions and levels of assessment

Functions

1. **Governance** of RFH
2. **Financing** RFH
3. **Developing and sustaining resources** for RFH
4. **Producing** RFH
5. **Using** RFH

levels of assessment



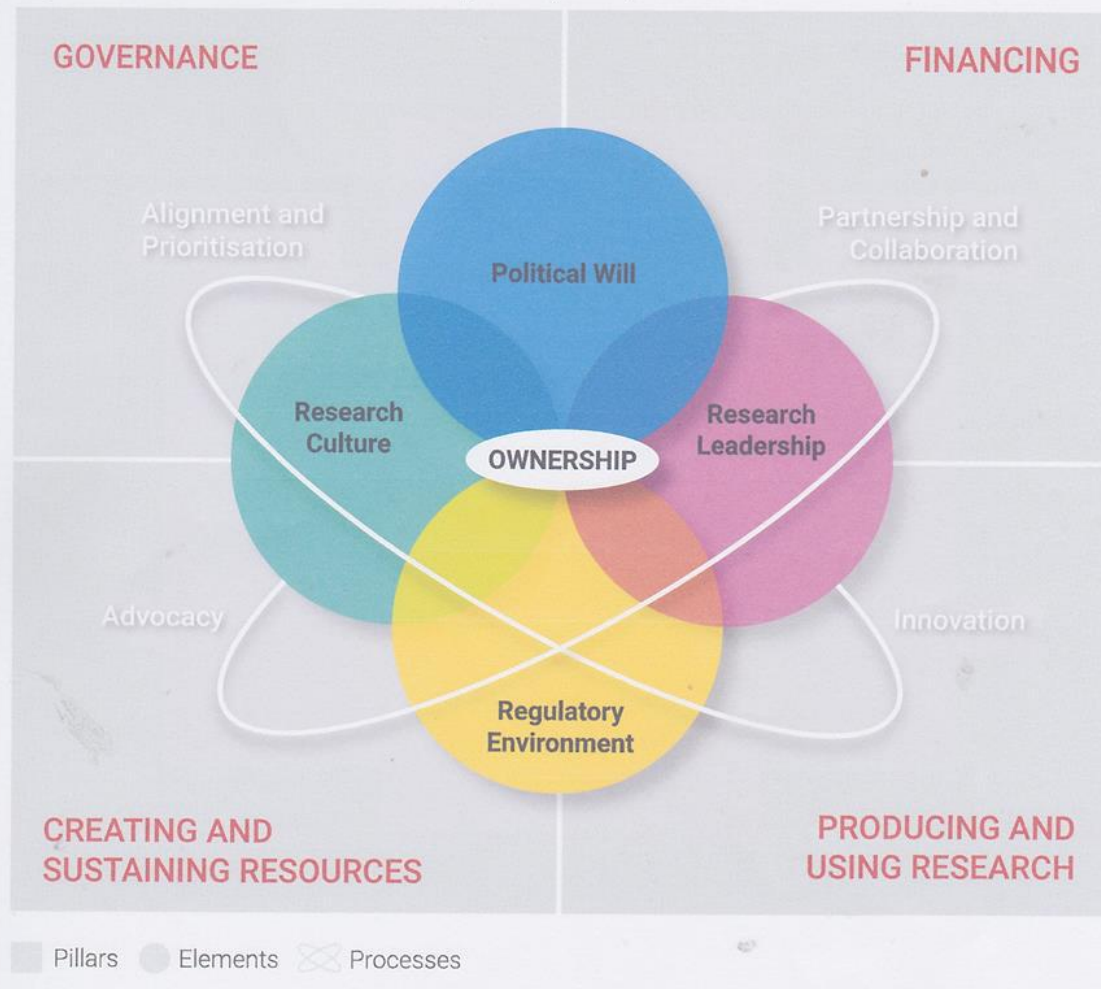
Key refinements in indicators in this iteration

1. **Using a whole-systems' perspective** in assessing indicators to include, acknowledging that:
 - strengthening NHRS is a **fluid and evolving** process with lots of interactions, non-linear processes and feedback
 - indicators are **measuring and influencing multiple components** of the NHRS change process
2. **Using “tracer” indicators** to capture underlying processes that strengthen NHRS, e.g., stewardship, political will, research culture and strength of regulatory infrastructure

Empirical NHRS framework

LSE; strengthening NHRS in Africa case studies (April 2021)

Figure 2: National Health Research System (NHRS) framework



Examples of underlying processes being captured by current list of indicators

- Stewardship and regulatory functions
 - when legislations are in place, clinical trial registration and ethics oversight are enforced
- Coordination and partnership functions
 - when funding is linked to an existing national health research priorities list
- Research leadership
 - when local knowledge gaps and health needs drive research priorities
- Research culture
 - when evidence is used to inform decision making and mechanisms for translating evidence to policy exist

Take away message and next steps

- The process is the highlight of this work!
 - Regional ownership, cross learning, tool improvements, sparked motivation to collaborate and harmonize...
- Next steps:
 - Start populating interactive dashboard with data
 - consolidate list and refine if needed
 - Make available from the Observatory and update as more data are available
 - Write up to document and share

World Report & iSearch Analytics.

Michael Cheetham, NIH/OD
ESSENCE WGRI Annual Meeting
November 1, 2021



- Direct awards + indirect collaborations from 14 biomedical research funders
- Over half a million funding records at over 25,000 research institutions in 195 countries

Uses

- Understand institutional landscape
- Identify potential collaborators
- Find funding opportunities
- Analyze health issues



iSearch Analytics Vision

An intuitive, user-centric analysis platform

Streamlined

Combines key functions for portfolio analysis that are currently available across a range of tools into one comprehensive toolkit

Comprehensive

Delivers comprehensive portfolio analysis for a wide range of users from data scientists, to the casual trend observer

Configurable

Enables tailored views and visualizations by user, organization, or topic

Scalable

Scales to capacity for global high-demand usage



iSearch Analytics transformative new features

Three major features planned for *iSearch Analytics*



Visualizations Reimagined

Word2Vec-driven cluster
visualization with AI labels



Disambiguation

Disambiguation to provide
users with scientific-level data
and metrics



Literature Expansion

Going beyond PubMed: Expanded
publication coverage and adding preprints

Complementary to other tools

Uniquely positioned for analysis

iSearch 2.0



iCite 2.0



COVID-19



World RePORT



User Feedback

Competitive Research

Collaboration

Leading-edge development



iSearch Analytics

