UCL Health of the Public Symposium, 30 November, 2021

Global Health Security and Resilience - Making a Safer World

Session: Creating resilient environments

Presentation on

Local innovations, manufacturing and supply chains in LMICs

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Happy to be here to contribute to this conversation on what we call ‘wicked problems’ in my department, very much a global existential challenge at this moment. I am passionate about local capabilities, and have written about local health, as an important lens to try and operationalize the concept of global health; and this includes thinking beyond the usual actors in exploring opportunities for more responsive and inclusive healthcare systems.

This presentation

- About why **local health matters** in global health security and resilience. This is an argument I've been making for a while now with colleagues at the University of Edinburgh and Open University, and partner universities in India and parts of Africa … unsettled by or uncomfortable with some of the fallacies in global health narratives, hence proposing the local health narrative as a pragmatic way of operationalizing global health, generating and sustaining local health system capabilities
- Local not just as a location but local as localization, local agency, local empowerment and local structural transformation. Local as a place of learning, knowing and doing
- Global - not about power or the concerns of a few, but about inclusiveness and responsiveness

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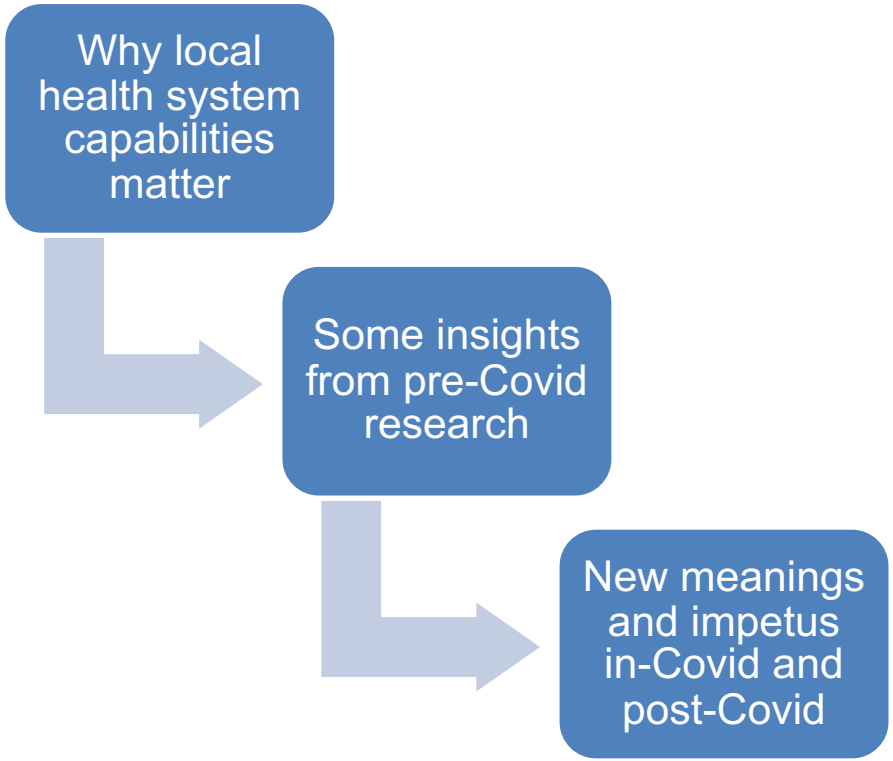
Creating resilient environments



Covid-19 – more than just an urgent health challenge and finding solutions to it

- For **development** – about historical, contemporary and future societal progress trajectories and unstainable options that have been pursued
- For **(health) innovation systems** – the complex and multisectoral character of innovation systems, and the need to take interactions and diverse ways of generating and using knowledge seriously
- For **public policy** – a call for effective and unprejudiced policies which do not only coincide with good development outcomes, but which cause good outcomes – disproportionate impacts of the pandemic and Syndemic Theory (Merrill Singer and Richard Horton)

Local innovations, manufacturing and supply chains

Engaged in analysing and interpreting the relationships between local manufacturing of medicines and health system strengthening in LMICs – especially sub-Saharan Africa

Examining notions of positionality, proximity and agency through the lenses of learning, capability development and innovation systems.

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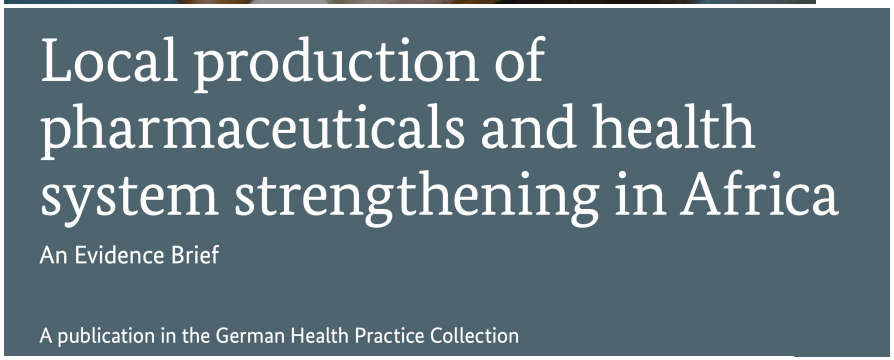
Methods and scope

Detailed case study analyses of countries, health and industrial sectors, firms, government and funder agencies

Covering more than 15 countries in Sub-Saharan Africa, especially, Southern, Eastern and Western Africa.

Findings: Pre-Covid19



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Original Article
OXFORD

Health-industry linkages for local health: reframing policies for African health system strengthening

Maureen Mackintosh[1,*], Julius Mugwagwa[2], Geoffrey Banda[3], Paula Tibandebage[4], Jires Tunguhole[4], Samuel Wangwe[4] and Mercy Karimi Njeru[5]

- Through our work, question on local medicines manufacturing in African countries shifted from 'should they' to 'how best can they'? (Fact that some SSA countries have had pharma industries since the 1930s - colonial and post-colonial dynamics evolved, SAPs happened, globalization deepened)
- Correlation between strong local production and distribution capacities with
  - improved access to essential medicines
  - through shortening of supply chains and
  - subsequent reduction of shortages and stock-outs of essential medicines demonstrated (WHO, 2011, Mackintosh et al, 2016; Mackintosh, Mugwagwa et al, 2018)

We have strongly argued for strong health-industry complexes, not just as sources of products required in dealing with everyday challenges (resilience is conditioned by everyday practice), but as spaces for learning by doing, trust, preparedness and resilience building

Findings: In Covid

The pandemic has exacerbated international inequality in health, as high-income countries dominate international procurement and vaccine development and deployment.

The pandemic generated, and in some cases exacerbated supply chain challenges for SSA health systems

Stemming from a toxic combination of import dependence and low purchasing power for health commodities.

Yes, globalisation has deepened over the last few decades, and the advantages of integrated production systems have been seen … but they came along with a concentration risk and Covid has indeed confirmed fears on sustainability and reliability of global production and distribution systems across many sectors, including the health sector

Scarcity-induced innovation

- Some African countries were able to leverage and/or repurpose existing manufacturing capabilities to respond to the crisis through local production of sanitisers, PPE, test kits, oxygen delivery mechanisms, ventilators and participate in vaccine trials.
- According to one African manufacturer who participated in a webinar we convened in Oct 2020, some innovations were by "people who weren't given the opportunity to innovate in a pre-Covid world".
- The pandemic has also evoked humanity's indomitable spirit, not just from the headline grabbing feat with vaccine development.

Circling back to why local health matters - rethinking global health security – 'leaving no one behind' is not a nice-to-have

- 'The pandemic seems to have ushered in a new wave of transactional approaches to international relations (protectionism and nationalism), some kind of retreat to narrower national interests. The ability to respond locally to emergency needs has been determined by two big factors: accumulated manufacturing capabilities, and **the institutional structures that shape and constrain innovation** such as university technological capacities, regulatory structures and procurement skills' (excerpt from ongoing work on local pharma manufacturing during Covid19)
- Multiple, new, transient and **transactional** interactions – how do we expand our peripheral visions and strengthen corporate memory?

Implications for policy and practice – creating resilient environments

LOCAL HEALTH MATTERS

Need for capacity and agency in local health systems, buttressed by local industrial capabilities. Health delivery or responses are after all a national issue in response to transnational challenges.

BUILD TOGETHER BETTER

Not been a big fan of BBB. Getting more people into so-called mainstream healthcare services is not the only option. There is need to de-centre and where necessary disrupt privileged and outmoded ways of knowing or doing which sustain fractures, vulnerabilities and exclusion. There is need for political and collective good will to do this

INSTITUTIONAL ENTREPRENEURSHIP KEY

Both centre and periphery actors from the global to the local need to reimagine the models we have for manufacturing, procurement and health delivery. Afterall, resilience is equally about mindsets, operations and structures


TUNISIA
MOROCCO
ALGERIA
LIBYA
EGYPT
WESTERN SAHARA
MAURITANIA
MALI
NIGER
CHAD
SUDAN
ERITREA
CAPE VERDE
SENEGAL
THE GAMBIA
BURKINA FASO
GUINEA BISSAU
GUINEA
DJIBOUTI
SOMALIA
NIGERIA
SOUTH SUDAN
ETHIOPIA
SIERRA LEONE
LIBERIA
COTE D' IVOIRE
GHANA
TOGO
CAMEROON
CENTRAL AFRICAN REPUBLIC
EQ. GUINEA
GABON
CONGO
UGANDA
KENYA
RWANDA
DR CONGO
SEYCHELLES
BURUNDI
TANZANIA
COMOROS
MAYOTTE
ANGOLA
ZAMBIA
MALAWI
MOZAMBIQUE
MADAGASCAR
ZIMBABWE
MAURITIUS
REUNION
NAMIBIA
BOTSWANA
ESWATINI
LESOTHO
SOUTH AFRICA
ST HELENA
African Pharmaceutical Manufacturing Footprint
Drug Manufacturing
Vaccine and Drug Manufacturing
Manufacturing Disrupted by War
Reported as Having Manufacturing Laboratories
No Data

Pharma manufacturing in Africa

- There are at least 649 manufacturing plants on the continent with North Africa having the largest share at 272, followed by West Africa which has 178 plants, Southern Africa with 139 plants and East Africa with at least 60 manufacturing plants (Table 1). The countries with the highest manufacturing plants are South Africa (122), Egypt (120), Nigeria (115) followed by the next strata between 30 and 60 plants composed of Algeria (55), Tunisia (39), Kenya (35), Morocco (33) and Ghana (30). The next strata with plants less than 20 include Sudan (25), Cameroon (15) Ethiopia and Uganda at 11 and the rest below 10 plants. Table 1 shows that there are clear regional hubs for pharmaceutical production; Ghana and Nigeria for West Africa and in East Africa Kenya is the main hub with Ethiopia and Uganda as key players. North Africa shows a vibrant sector, however in terms of numbers of plants Egypt ranks first. As described later, North Africa outranks the other region in terms of the formulations and technological capabilities because the local industry has leveraged joint ventures to facilitate technology transfer and move upstream in terms of branded drugs and biosimilars.
- The numbers of plants may vary per country at any one time because some of the sources that we used to get an estimate had contradicting numbers. In most instances we relied on government and company sources, as data presented by industry experts at especially international NGO for a for pharmaceutical manufacture.

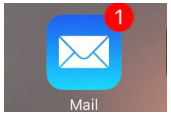
Covid Cases by Continent

Continent	Population	Total Covid Cases	% of population affected	Affected per 1000 people	Deaths per 1000 people	Failed to recover	% vaccinated
Africa	1282 million	8,656,032	0.68	6.75	0.17	3%	
Asia	4722 million	91,635,208	1.9	19.4	0.32	2%	
Europe	603million	64,050,520	11	106	1.89	2%	
North America	587million	57,914,076	9.9	98.6	1.99	2%	
Oceania	42million	365,866	0.87	8.68	0.10	1%	
South America	427million	38,954,174	9.1	91.2	2.76	3%	

Vaccination stats

	Total doses given	People fully vaccinated	% of population fully vaccinated	
Worldwide	7,809,694,904	3,333,599,017	42.9	
UK	114,809,189	46,309,909	69.7	
South Africa	25,274,889	14,288,326	24.3	
Zimbabwe	6,568,694,	2,897,808	18.5	
Zambia	1,062,540	671,006	3.8%	
Botswana	1,352,775	469,369	20.1%	
Kenya	6,959,988	2,664,224	5.6%	
Madagascar	625,884	425,211	1.6%	
Tanzania	885,578	885,579	1.6%	
Ethiopia	4,478,852	1,434,050	1.5%	
DRC	189,749	53,013	0.06%	
Mainland China	2,330,726,000	1,072,454,000	76.5%	
India	1,223,194,701	438,546,779	32.2	
Canada	60,438,189	28,984,579	76.3%	
Brazil	306,519,588	133,606,390	63.2%	
Rwanda	8,748,557	3,004,325	24.3%	
Nigeria	9,640,048	3,456,204	1.7%	
USA	454,447,737	194,668,359	59.1%	

Thank you for listening



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