Why we need research capabilities in place in every healthcare setting if we are to prevent the next pandemic

John Amuasi (MBChB. MS. MPH. PhD. FWACP.)

• Head, Department of Global Health, School of Public Health, Kwame Nkrumah University of Science and Technology (KNUST)
• Leader, Global Health and Infectious Diseases Research Group, Kumasi Collaborative Center for Research in Tropical Medicine (KCCR at KNUST) and Bernhard Nocht Institute of Tropical Medicine, Hamburg, Germany
• Adjunct Assistant Professor, University of Minnesota School of Public Health, USA
• Honorary Visiting Research Fellow, Oxford University, Nuffield Department of Medicine, UK
• Executive Director, African Research Network for Neglected Tropical Diseases
• Co-Chair, The Lancet One Health Commission
• Board member, The Soulsby Foundation
• Board member, American Society of Tropical Medicine and hygiene
PREVENTING THE NEXT PANDEMIC:
Research capabilities in healthcare settings
The Next Pandemic
INTRODUCTION:

+135m

People pushed into poverty by 2030

Increasing Health Care Need

NCD

Excess Mortality

NCDs

125 million cases with Over 2,700,000 deaths globally
We face some of the biggest existential health threats ever!

• Pandemics of emerging and re-emerging infections
• Ecosystem loss & biodiversity collapse
• Antimicrobial resistance
• Rising food insecurity
• Climate change and its consequences

... and many others

The rationale for embedding a research culture is unshakeable
There is not guarantee the world (humans in particular) will survive every pandemic.
The high costs of leaving some behind

Due to globalization and other factors, a health threat anywhere is a threat everywhere

Lessons from:
• The 2014 West African Ebola Epidemic
• COVID-19
• Ghana Marburg (scare?) 2022

Marburg virus outbreak in Ghana: An impending crisis

Jack Wellington, Aycı Nur, Aderinto Nicholas, Olivier Uwherem & Hassan Chaito, Olutola Awosiku, Yusuf Jaafer Al Tarawneh, Jana Abdul Nasser Sharafeddine, Chinyere Vivian Patrick Onyeaka, Helen Onyeaka
Research is key to our collective survival

For much of civilized history, life expectancy was 30 - 40 years
But what does it mean to enable research capacity?

Let’s try this definition:

To develop sustainable infrastructure, know-how, and skills to enable individuals and organizations perform high quality research.
We see only what we know.

~ Johann Wolfgang von Goethe
Case identification and documentation is key and this happens in the health facilities. This is the beginning of any disease surveillance.

Changing the mind-set and increasing the alertness level of healthcare workers for case identification.
Marburg in Ghana

- Early Clinician Identification
- Early Public Health Action
- Limited Spread

Ebola in West Africa

- Late Clinician Identification
- Late Public Health Action
- Widespread infection

Emerging Microbes & Infections

Delayed recognition of Ebola virus disease is associated with longer and larger outbreaks
Diseases do not pick a location!

Capacity Development in urban health centers should be equal to rural health centers.

Train all cadre of staff: Doctors, Nurse, PA, etc. to identify what is strange and report it
Research as a component of healthcare at all levels

- Creation of the **GOLDEN SPACE**: Embrace the culture of having research work embedded in routine disease prevention and control including treatment
- Funding allocated for registries and clinical data collection platforms
- Funding for capacity building to be research ready to run parallel to routine clinical care
LEVELS OF CARE AND RESPONSIBILITIES
(total ca. 4,000 healthcare facilities)*

LEVEL 5
Tertiary hospitals | Private: 17% | FB: 0% | 6

LEVEL 4
Regional hospitals | Private: 0% | FB: 0% | 9

LEVEL 3
District hospitals (364) | Private: 47% | FB: 16% | 364

LEVEL 2
Health centres & clinics | Private: 43% | FB: 8% | 2,346

LEVEL 1
Health posts or outreach sites, mobile health services
Private: 0% | FB: 0% | 653
the ‘epidemic research crisis’

Shifting the curve:
2009 influenza pandemic

Patients enrolled

Shifting the curve......
the ‘epidemic research crisis’
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<th>Diagnosis</th>
<th>Covid Trial</th>
<th>Microbiol Results</th>
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Research Capabilities in Everyday Health Settings

- The case definition and identification of cases
- Sampling Skills
- Handling of samples
- Documentation
- Ethics of Research
Research Capacity: Educational Approaches

- Online courses
- Pre-course reading materials
- Lectures, Case studies and Bedside teaching
- Group work and Presentations
- Practical sessions involving simulations and role playing
This works!
Researchers and Government engagement

- Promoting understanding of the role of research
- Research independence
- Uptake of research into policy and implementation of research
Challenges

- Ethical clearance delays
- Implementation and training
- Politics
- Monitoring
- Collaboration and Resource mobilization
- Tools and technology
- Quick and relevant output
- Race against time
Conclusion

Global health emergency → Research and output → Treatment and vaccines → Improved health care
Conclusion

Case Identification and initation of Clinical Research → Global health emergency → Research and output → Improved health care → Treatment and vaccines
Behold, the TEAM! Global Health and Infectious Diseases

- Multi-disciplinary:
  - Pharmacy
  - Medicine
  - Immunology
  - Social Sciences
  - Molecular Biology
  - Environmental Sci.
  - Public Health
  - Microbiology
  - Biochemistry
  - Biostatistics & Modeling

- Clinical Trials:
  - ANTICOV
  - SANOFI
  - RECOVERY

- Other Projects:
  - SnakebITE
  - HWS
  - SeroCoV
  - ALERRT
  - FISSA
  - CCP
  - SEXISS