

### The Role of International Organizations During a Pandemic

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### **Objectives**

SARS—CoV-2 Pandemic: Current Status

Background on IUCGH and AMPATH partnership

AMPATH: Impact of and adaptations to the pandemic

Challenges and opportunities ahead for global health community



#### **SARS-CoV-2** pandemic

#### Global case count: > 103 million



#### Global deaths: > 2.2 million





#### Daily reported COVID-19 Cases Reported in the United States-Slopes of 3 Surges

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Modified from Fauci, ICAP World AIDS day presentation, Source: Worldometer

#### Indiana

**Hospitalizations** 



#### When to Expect the Next Vaccine

Progress: Trial Results expected Awaiting approval Available to public

🛉 Trial size \delta Doses required 🗱 Storage temperature 🕑 Efficacy



Russia and China took the unusual step of allowing vaccine distribution before conducting large-scale clinical trials.

#### Sinovac Biotech ∮26к 👌 2 💥 2-8°С Ø 50%

Sinovac's vaccine triggers an immune response using the Covid-19 virus itself, after it has been chemically inactivated.

#### Gamaleya ∳40K ()2 ∰ –18°C Ø92%

A variation of the Russian vaccine, known as Sputnik V, can be stored using standard refrigeration temperatures of 2–8°C. It's currently available in limited quantities.

CanSino Biologics ∮40K 
♦ 1 
★ 2-8°C

CanSino's shot was approved for the Chinese military even before late-stage tests began. It uses a harmless cold virus to deliver its genetic payload.

#### Sinopharm ∳50к 02 ₩2-8°с Ø79%

Sinopharm administered hundreds of thousands of doses before its vaccine was fully tested.



### **COVID-19 Vaccinations in the US**

Total Doses Distributed 49,936,450

Total Doses Administered 32,222,402 Number of People Receiving 1 or More Doses

26,023,153

Number of People Receiving 2 Doses

5,927,847

CDC |Data as of: Feb 01 2021 6:00am ET | Posted: Feb 1 2021 1:55PM ET



#### **Global Vaccine Rollout**

#### **Global Vaccination Campaign**

% of population given

Country	Doses Administered	Doses per 100 people	1+ dose ▼	2 doses	Daily rate of doses administered
Global total	104,668,029	-	-	-	4,224,536
Seychelles	35,079	36.54	36.5	-	2,170
Israel	5,051,363	55.81	35.4	20.4	144,004
U.K. +	10,143,511	15.19	14.4	0.7	402,534
Bahrain	172,912	11.65	11.7	-	2,399
U.S.	33,713,182	10.26	8.2	1.9	1,318,480

https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/



Note: Data gathered from government websites, press conferences, public statements and Bloomberg interviews.

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### **Race against SARS-CoV-2 variants**

- Number of mutated strains have been described
  - > More easily transmitted  $\rightarrow$  more cases  $\rightarrow$  more deaths
  - ? Greater virulence
  - > ? Escape "natural" or vaccine-induced immunity
  - Many mutations also come with a fitness cost









### **Global Health at Indiana University**

IU's global health efforts span over 20 countries; many schools and disciplines

#### **IUCGH: University-wide Center**

**Mission:** To develop mutually beneficial partnerships across disciplines, schools and countries for the primary purpose of creating and implementing sustainable programs that improve health and human flourishing in underserved areas worldwide, and preparing a critical mass of health education and health research experts in these communities to become the next generation of local, national and global health leaders.



#### **Academic Model Providing Access to Healthcare**



- Partner in the delivery of health services and strengthen public sector health systems
- Strengthen and develop human capacity through training and education
- Advance research to improve the health of underserved populations
- Improve access to high-quality medical care and reduce health disparities





Where we work in western Kenya







Holistic, sustainable approach focused on facility and community-based care, social determinants of health

Infrastructure investment

Serving catchment population of > 20 million individuals

Partnership across 27+ disciplines in counterpart relationships

> 170,000 people living with HIV in >800 facilities

> 34,000 with NCDs

MNCH and child life

Cancer care from community screening to expert surgery, chemotherapy and XRT

#### **Training**

Bilateral faculty and trainee medical exchange

Scholarship support for Kenyan medical students

Clinical and Research training

Medical, Dentistry, Nursing, Public Health, Agriculture, Engineering, degree and diploma programs

> 340 Kenyan trainees to NA

- > 1900 NA trainees to Kenya
- > 30+ years of NA faculty presence

> 10 new residency and fellowship programs

#### **Research**

Focus on relevant implementation science that informs local, national, and international policy

Multi-disciplinary health systems approach

Development and support of robust research infrastructure Equity in partnership

> \$169 million cumulative research funding

- > 800 publications
- > 70 active projects

### Challenging times for global health efforts

- Stressed health systems in much of the world
- Forced closure of educational institutions
- Disrupted global economy
- Shut down or forced redirection of research
- Restricted travel for faculty, trainees
- Forced institutional budget cuts

Never has the inter-connectedness of the global community and the need for global cooperation been more obvious



### **IUCGH: Adjusting to the pandemic**

- Strengthening Health Systems
  - Remote support for our Kenyan colleagues
    - COVID-19 response
    - > Support ongoing service delivery, education, research
  - > Applying global experience to local COVID response in Indiana



#### KENYA COVID-19 TIMELINE CHART:





#### Kenya situation and direct effects

Early mitigation/travel restrictions

Rapidly re-tool regional HIV laboratories into COVID diagnostic centers

Global Fund funds re-directed

MTRH developed COVID Task Force -training and preparation -established home-based care effort



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### Kenya situation and direct effects

Early mitigation/travel restrictions

Significant shortages in testing commodities

Rapidly re-tool regional HIV laboratories into COVID diagnostic centers

Global Fund funds re-directed

MTRH developed COVID Task Force -training and preparation -established home-based care effort Inadequate supplies of PPE

Lack of dedicated inpatient, ICU space, access to oxygen

Infection control lacking, many HCW infections and over 30 deaths

Private medical insurers all declared COVID an exclusion





### **IUCGH COVID-19 Support for Kenya**

- > Health systems
  - > Materials: PPE, testing commodities, clinical equipment
  - Workforce support: IU faculty, training/knowledge sharing, virtual support for MU training programs
  - Understanding and mitigating impact on service delivery locally
- Community
  - Understanding and responding to economic needs (cash transfers)

Has required redirecting existing program/philanthropic funds and increased development effort to raise philanthropic funds, creative virtual forums for connecting with program supporters

### Potential indirect impact of the pandemic

- In high burden settings, deaths due to HIV, tuberculosis, and malaria over 5 years could increase by 10%, 20%, 36% respectively compared with if there was no COVID-19 pandemic
  - Interruption of ART
  - Delays in TB diagnosis and treatment initiation
  - Interrupted public health campaigns (bednets)

Potential impact of the COVID-19 pandemic on HIV, tuberculosis, and malaria in low-income and middle-income countries: a modelling study Lancet Glob Health 2020; 8: e1132-41



#### **Disruptions in essential services**

- 1. Routine immunizations
- 2. NCD diagnosis and treatment
- 3. Family planning and contraception
- 4. Antenatal care including PMTCT
- 5. Treatment of mental health disorders

#### World Health Organization

Pulse survey on continuity of essential health services during the COVID-19 pandemic





### **Potential impact on Economic Development**

- Preliminary estimates that COVID-19 will result in a 1.4 8% contraction in African economies
- 30 million more people could fall into poverty and number of acutely foodinsecure people could significantly increase
  - > Will require expansion of social welfare systems

COVID-19 in Africa: Regional socio-economic implications and policy priorities

Organization for Economic Cooperation and Development

Assessing the Impact of COVID-19 on Africa's Economic Development UN Conference on Trade and Development, July 2020

# Preliminary data: phone survey of Syndemics cohort (leDEA)

- Impact on Health
  - Very few, even those with symptoms accessed COVID-19 testing
  - > HIV treatment access and adherence was largely maintained
  - > 1/3 experienced worsening depression/anxiety
- Economic impact
  - ➢ 50% lost income
  - ➤ 13% lost job
  - > 60% reported food insecurity (most or some of the time)

## Applying global experience to local COVID response in Indiana

- June 2020, IUCGH was asked to assist with Indiana University's COVID-19 response as part of the Medical Response Team
- Indiana University
  - > 9 campuses across the State + Medical Centers
  - > ~ 120,000 faculty/staff/students



### **AMPATH's response to HIV pandemic**



- First patient treated in 2001
- 2004: USG launches PEPFAR
- 2006: Serving 20,000 people living with HIV,
   300K cumulative visits
- 2021: 175,000 people living with HIV active in care

AIDS: January 14th, 2009 - Volume 23 - Issue 2 - p 195-201

### **AMPATH's response to HIV pandemic**

- Hire, train, mentor workforce
  - Counselling and Testing (opt in, opt out)
  - Care providers
- Prevention activities
- Write care protocols
- > Address food insecurity, poverty and other social determinants
- Identify key populations and implement targeted interventions
- > Ensure supply chains of testing reagents, therapeutics
- > Build electronic medical record system
- Contact tracing
- > Work with central Ministry of health and local health officials
- Advocacy

### Parallels between HIV and COVID-19 Response

- Prevention activities
- > Hire, train, mentor workforce
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- Mitigation (distancing, masks, shutdowns)
- Testing (symptomatic, asymptomatic)
- Contact Tracing to support effective isolation and quarantine
- Working with local health departments and IDOH
- Identify high risk groups and respond to outbreaks

#### Medical Response Team Organization Symptomatic Testing & **Contact Tracing** Surveillance & Mitigation Mitigation Testing Mission: Coordinate testing Supporting MRT Members: (symptomatic/asymptomatic/ **MRT** Coordination surveillance), contact tracing, Educ/Comms -**MRT Reports to Restart Committee & Exec. ALC** outbreak response, clinical expertise, EHS education. and data visualization **IUSoM CRU Regional CRU Bloomington CRU** Indy CRU IUE: Med. Educ. Sites IUFW -**IUK: IUPUC** – IUN: **IUSB: Supporting Orgs for Coordination:** IUS: EHS, RPS, Fac. Ops, Etc.

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#### Symptomatic Testing & Mitigation

#### Contact Tracing

#### Surveillance & Mitigation Testing

#### Vaccine

- Partnership with IUH
  - Virtual hub, sample collection and lab testing, symptom monitoring
- Identify/hire individuals to collect samples
- Identify and operationalize Q&I space
- Identify high risk groups and coordinate with administrators

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- Hire and train workforce of program managers (3) and contact tracers (~40)
- Develop scripts

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- Design interface to capture data and facilitate tracing
- Establish MOUs with LHD
- Outbreak investigation/case review
- Non-compliance

- Massive sample collection and lab testing infrastructure
  - Contracts, building lab capacity, hiring
- Non-compliance

- Liaise with ISDH, IUH on vaccine availability, prioritization, distribution
- Mobilize volunteer workforce to administer vaccine across State

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#### Communication

#### **Metrics**

- Positivity rates (mitigation testing, voluntary testing, symptomatic testing) within IU population and in the Counties surrounding campuses
- Lab test turnaround time
- Efficiency of contact tracing
- Utilization of quarantine and isolation space
- Hospital and ICU bed capacity



### **COVID** at Indiana University



- >10,000 Close Contacts interviewed since July 2020
- No evidence of widespread classroom transmission (no increased risk from in-class learning)
- Being part of the IU community safer than not

#### **Mitigation Testing**



#### **TEST RESULTS**



PERCENT POSITIVE

### **Contact Tracing at IU**



https://www.theatlantic.com/ideas/archive/2021/01/colleges-took-pandemic-seriously/617879/

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## Additional Roles that IUCGH has played during the pandemic

- > ADVOCACY
  - Importance of the World Health Organization
  - Global Vaccine Equity
  - Focus on inequalities in US
    - Racial disparities in COVID incidence, outcomes, vaccination rates



### **Global Disparities, Local Disparities**





#### World's most unequal countries

Gini index for income inequality ranges from zero (absolute equality) to 100





### **Minority Communities**

Disproportionately high risk of <u>infection</u>, <u>hospitalization</u>, <u>death</u> in minority communities (African Americans, Native Americans, LatinX)

The Disproportionate Impact of COVID-19 on Racial and Ethnic Minorities in the United States

CID, June 2020



#### Hope for the future

- Rapid vaccine development in record time
- GAVI (Global Alliance for Vaccines and Immunization)
  - COVAX Advance Market Commitment aims to ensure that 92 low and middleincome countries equitably access COVID-19 vaccines

### Opportunities/Responsibility of the Global Health community

Assess and document the impact of COVID-19 on health programming even as we strive to limit the damage

Acknowledge and document global inequalities and work to correct the underlying injustices that drive them

Advocate for equitable access to COVID19 diagnostics, therapeutics, vaccines

Support innovation- telemedicine, new models of service delivery, mental health response with CHVs trained to deliver psychological first aid

Develop new models of engaging trainees in global health programming



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### **Re-Thinking Global Health**

- AMPATH's model provides a framework for global health partnership that strives towards equity
  - Kenyan leadership
  - Individual and institutional capacity development
  - Building public sector systems, not silos
  - Bilateral exchange
  - Kenyan student scholarships
  - Reciprocal innovation
- Opportunity to reflect upon 30 years of partnership in Kenya, particularly in context of new calls for "decolonization" of global health





#### Summary

- IUCGH has adapted in the face of global pandemic
- Challenges that lie ahead are significant... but so are the opportunities to make a difference!



## Thank you

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