Severe Typhoid in Africa Program (SETA): Incidences, methods, preliminary results

Impact of a typhoid conjugate vaccine (THECA): a multicenter study in Ghana and the Democratic Republic of the Congo

Capturing data on Antimicrobial resistance Patterns and Trends in Use in Regions of Asia (Captura)

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27 March 2019

This project is part of the EDCTP2 programme supported by the European Union



СТР







Severe Typhoid in Africa Program (SETA)



International Vaccine Institute

Severe Typhoid Surveillance in Africa (SETA) Program

Burkina Faso

<u>Ouagadougou</u> (2,532,311) Yalgado Hospital (tertiary) Charles de Gaulle Hospital (pediatric tertiary)

<u>Nioko II (</u>19,251) Kossodo Hospital (secondary)

<u>Polesgo</u> (7,897) Polesgo Health Care Center (primary)

Ghana <u>Kumasi</u> (1,730,249) *Komfo Anokye Teaching Hospital (tertiary)*

Ghana

<u>AAN</u> (1,49,491) & <u>AAC</u> (71,508) Agogo Presbyterian Hospital (secondary)

Nigeria

Ibadan (1,343,147) University College Hospital (tertiary) Our Lady of Apostles Catholic Hospital Oluyoro (secondary) Adeoyo Maternity Teaching Hospital (secondary) Kola Daisi Foundation Community Health Centre (primary)

> Democratic Republic of the Congo <u>Kisantu</u> (157,251) Kisantu Hospital Saint-Luc (tertiary) Nkandu 1 Health Center (primary) Kavuaya Health Center (primary)

✓ 6 countries

- ✓ 12 study sites
- ✓ 24 healthcare facilities
- ✓ Standardized with SEAP in Asia

Ethiopia

<u>Wolayita Sodo</u> (120,288) Sodo Health Center (primary) Sodo Teaching Hospital (secondary/tertiary) Sodo Christian Hospital (secondary/tertiary

Ethiopia

Adama Wenji (53,540 Shewa Alem Tena Health Center (primary) Gefersa Health Center (primary) Kuriftu Health Center (primary) Adama Hospital (secondary/tertiary)

Madagascar

Imerintsiatosika (44,669) Imerintsiatosika Centre de Santé de Base II (primary)



Madagascar

Antananarivo (1,247,025) Centre Hospitalier Universitaire d'Antananarivo-Hopital Joseph Ravoahangy Andrianavalona (tertiary) Centre Hospitalier Universitaire Joseph Raseta Befelatanana (secondary/tertiary) Centre Hospitalier Universitaire Mere Enfant Tsaralalana (pediatric secondary/tertiary)

Country <u>Site</u> (Population) *Healthcare facilities*



Standardized passive surveillance



Health Care Utilization Surveys implemented at each site



SETA incidence methods – formulas and adjustments



PYO: person – years of observation

¹ Adjustment applied in adults if the SETA BC contamination is 5% or more AND in children if SETA BC contamination is 15% or more.

Cluster-randomized TCV trial in children <15 years DR Congo

TCV mass vaccination campaign in children <15 years, effectiveness study

THECA - complementing the TyVAC efforts

Vaccine clinical efficacy, effectiveness, including

population-level protection (direct and herd)

All THECA countries

Additional data needs

Long-term safety

Immunogenicity

Cost-effectiveness

Ghana

- Early adopter countries support for TCV introduction (implementation, GAVI applications)
- Health economic studies

General assembly:

Chaired by

- Florian Marks
- John Clemens
- Kathleen Neuzil







icddr,b



Design:	A cluster-randomized Phase 3 study of Typbar-TCV®
Setting:	Asante Akim North, Ghana, characterized by both semi-urban and rural settlements and low population migration
Population:	The aim is to enroll all eligible, consenting children meeting inclusion criteria within the target age range (9 months to <16 years). Anticipated coverage is 60% (approx. 28,000 children)
Measurements:	Herd immunity, overall and total effects of vaccination

The trial is designed to mimic the TyVAC-Bangladesh trial. The trial protocols will be harmonized to ensure maximum comparability of data



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Design:	A mass vaccination campaign with nested case-control effectiveness study; cases defined as patients being blood culture-positive for <i>S</i> . Typhi.			
	Four controls matched on neighborhood, sex and age will be enrolled for each case			
Setting:	Kisantu, DR Congo (population 183,750)			
Population:	All children from 9 months to <16 years of age			
Measurements:	Vaccine effectiveness, cost-effectiveness, safety and feasibility			



Support regulatory affairs for TCV introduction in African early adopter countries



 Three pan-African typhoid conferences will planned at the beginning, midpoint and end of the study.

Study objectives, progress and outcomes will be communicated to study partners and stakeholders.

- ✓ Work within DRC, Ghana, Madagascar, Burkina Faso to support the collection of the necessary data to enable the quick introduction of TCVs
- ✓ Support THECA countries with the respective GAVI applications



Capturing data on Antimicrobial resistance Patterns and Trends in Use in Regions of Asia (CAPTURA)





CAPTURA

Capturing data on Antimicrobial resistance Patterns and Trends in Use in Regions of Asia

• The UK Government has established the Fleming Fund to respond to the global threat of antimicrobial resistance (AMR)

> UKAID Development Programme to help build AMR surveillance systems

- Regional Grants round 1; a "call for data", which aims to expand the volume of historical and current data available on AMR and AMU across regions
- IVI leading an international consortium that has been awarded the grants for South and South East Asia
- Increase the volume of data available to improve spatiotemporal mapping of antimicrobial resistance (AMR) and antimicrobial usage (AMU)
- Undertake analysis of the data and ensure it is disseminated locally and globally











Additional data sources for typhoid for future Gavi applications and risk factor-based typhoid occurrence prediction models



Research providing data to understand typhoid fever and iNTS disease burden, severity and antimicrobial resistance in Africa in support of future TCV introduction.

SETA

Ongoing efforts; preliminary data:

- Typhoid fever disease in all countries participating in SETA with higher incidence rates in <15 years old.
- iNTS disease in three countries (DRC, Ghana, Burkina Faso) with higher incidence rates in <2 years old.

THECA

- Recently awarded
- Complementing TyVAC efforts to generate additional data required by WHO, Gavi, other stakeholders supporting TCV introduction in Africa.

CAPTURA

• Currently ongoing; providing additional data on AMR and typhoid fever occurrence



Acknowledgments

Epidemiology and Outcomes team	Project teams	Country collaborators (SET	<u>A/TSAP)</u>	SAPORT	<u>r committee</u> (SETA)	
 EPI – Andrea Haselbeck EPI – Jong Hoon Kim EPI – Justin Im EPI – Ondari Mogeni EPI – Se Eun Park EPI – Ursula Panzner EPI – Hyon Jin Jeon EPI – Hye Jin Seo EPI – Ji Hyun Han EPI – Marianne Holm EPI – Ligia Cruz Espinoza EPI – Nimesh Poudiyal PER – Vittal Mogasale PER – Enusa Ramani 	 BDM – Yun Chon BDM – Gi Deok Pak BDM – Hyeongwon Seo BDM – Ju Yeon Park BDM – Geun Hyeog Jang PMU – Sooyoung Kwon CDR – Anh Wartel CDR – Tarun Saluja D&D - Julia Lynch 	 Mekonnen Terferi (Ethiopia) Abraham Aseffa (Ethiopia) R. Rakotozaindrindrainy (Madagasca Elis Owusu-Dabo (Ghana) Yaw Adu-Sarkodie (Ghana) Michael Owusu (Ghana) Octavie Lunguya (DR Congo) Marie-France Phoba (DR Congo) Lisette Kalonji (DR Congo) Lisette Kalonji (DR Congo) Abdramane Soura (Burkina Faso) Moussa Ouedraogo (Burkina Faso) Iruka Okeke (Nigeria) Femi Popoola (Nigeria) Remi Kehinde (Nigeria) 	ır)	Vorld Health Organization	 Robert F. Breiman Eric Mintz Sam Kariuki Gangandepp Kang Hope Johnson Thomas Cherian Jeff Stanaway Dennis Chao 	
 PER – Monica Moon PER – Dayoung Sung 			<u>Other</u>			
• Ken Smith • Gordon Dougan • Sophie Palmer • Simon Ha	BILL& MELINDA GATES foundation • Anita Zaidi • Duncan Steele • Megan Carey	• Valentina Picot • Hubert Endtz • Eric Houpt • Jie Liu	BIG DATA INSTITUTE OXFO	Aanensen	• Nicholas Tomso • Vanessa Wong • Silvia Argimon	n FRED HUTCH cures start Here* • Jonathan Surimoto rett
• Calman Mac	Iennan Windowa Institute for Division of the Residue Health Laboratory Service	Southampton • Andy Tatem	oucru	James Campbell	WUNIVERSITY of WASHINGTON • David	Pigott
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BILL& MELIN GATES J	NDA foundation	Fleming Fur	nd	This project is part of the EDCTP2 programm the European Union	the supported by	Kaid the British people