

^{1,2}Michael Owusu, ^{3*}Bernard Nkrumah, ¹David Sambian, ¹Godfred Acheampong, ¹Stephen Opoku Afriyie, ⁴Abbas Abdul-Karim Komei, ⁵Farida Njelba Abdulai, ⁶Gifty Boateng, ³Joseph Asamoah Frimpong, ⁷Pawan Angra, ⁷Danielle T. Barradas, ⁸Franklin Asiedu Bekoe

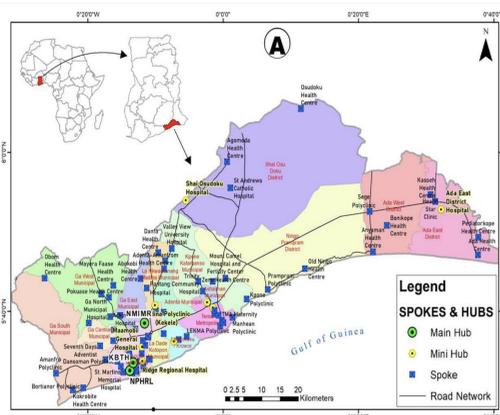
¹Centre for Health System Strengthening, Kumasi, Ghana, ²Department of Medical Diagnostics, Kwame Nkrumah University of Science and Technology, ³African Field Epidemiology Network, Accra, Ghana, ⁴Tamale Public Health Laboratory, Ghana Health Service, Tamale, Ghana, ⁵Regional Health Directorate, Greater Accra Region, Ghana Health Service, Accra, Ghana, ⁶National Public Health and Reference Laboratory, Ghana Health Service, Accra, Ghana, ⁷Division of Global Health Protection, Global Health Center, US Centers for Disease Control and Prevention, USA, ⁸Division of Public Health, Ghana Health Service, Accra, Ghana.

Sample Referral System (SRS) can be integrated with both routine and outbreak samples. An integrated SRS improves early detection of diseases of public health importance and promotes scalability at all levels.

BACKGROUND

Ghana has siloed specimen referral system (SRS) for tuberculosis (TB), HIV viral load (VL), and early infant diagnosis (EID).

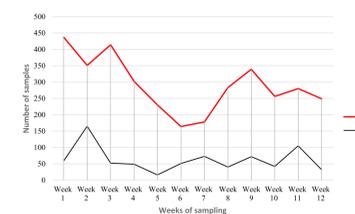
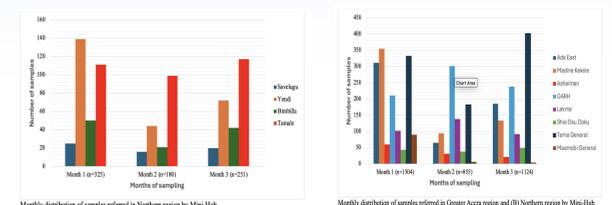
We piloted an integrated SRS to strengthen the diagnosis of diseases of public health importance in two regions: Greater Accra and Northern regions.



RESULTS

Overview of referred specimens in both regions

Samples Referred/Received	GAR	NR
Overall samples received	3483	756
Samples received at the main-hubs	2688	372
Samples received and processed at the mini-hubs	795	384



Scope of tests performed during implementation of the SRS pilot

Suspected disease	Type of specimen	Sample type	GAR (N=3483) n (%)	NR (N=756) n (%)
HIV viral load	Plasma	Routine	2338 (67.1)	168 (22.2)
HIV early infant diagnosis	Plasma	Routine	204 (5.9)	27 (3.6)
Suspected tuberculosis	Sputum	Routine	795 (22.8)	517 (68.4)
Suspected yellow fever	Whole Blood	On-demand	2 (0.1)	8 (1.1)
Acute flaccid paralysis	Stool	On-demand	3 (0.1)	6 (0.8)
Suspected COVID	Oro- or nasopharyngeal swab	On-demand	86 (2.5)	4 (0.5)
Suspected measles	Blood	On-demand	6 (0.2)	8 (1.1)
Suspected meningitis	Cerebrospinal fluid (CSF)	On-demand	12 (0.3)	2 (0.3)
Suspected mpox	Viral swab	On-demand	32 (0.9)	10 (1.3)
Suspected Buruli ulcer	Wound swab	On-demand	2 (0.1)	0
Suspected influenza	Nasopharyngeal swab	On-demand	3 (0.1)	0
Suspected viral hemorrhagic fever	Blood	On-demand	0	6 (0.8)

Fuel support for motorcycles and vehicles

Mode of Transport	No of Trips	Distance covered (km)	Cost/km (USD)	Total cost (USD)
Motorbike	12	1070	0.26	278.20
Public Transport	3	1007	0.15	151.05
Government Vehicles	4	1107	0.19	210.33
Grand Total	19	3184	-	639.58

Range of turn-around times per suspected case by region

Suspected Disease	GAR*	NR*
HIV Viral Load	14 days – 3 months	14 days – 3 months
HIV Early Infant Diagnosis	14 days – 3 months	14 days – 3 months
Tuberculosis	1-2 days	1-2 days
Yellow Fever	5-7 days	7-14 days
Acute flaccid paralysis	NE	NE
COVID-19	1-2 days	1-2 days
Measles	NE	7-14 days
Meningitis	NE	1-2 days
Mpox	NE	7-14 days
Buruli ulcer	NE	NA
Influenza	7-14 days	NA
Viral Haemorrhagic Fever	NA	7-14 days

METHODS

A cross-sectional mixed-method study
Study Duration: January – November 2022

Two study Regions
Greater Accra Region: 84 Health Facilities
Northern Region: 21 Health Facilities

Extensive Stakeholder Engagement

Health facilities were mapped using Hub and Spoke Model

Staff Training and Capacity Building

Provision of Fuel Subsidies

Use of facility owned motorbikes and vehicles

Provision of logistics and consumables

CONCLUSION

This pilot explored the feasibility of adopting an integrated SRS to improve early detection of diseases of public health importance in two regions of Ghana. This initiative ensured the integration of remote laboratories into the referral system and laid the foundation for potential scalability to the national level.

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AUTHOR CONTACT INFORMATION

Bernard Nkrumah
Email: bnkrumah@afenet.net

CONFLICT OF INTEREST

No competing interests declared

