

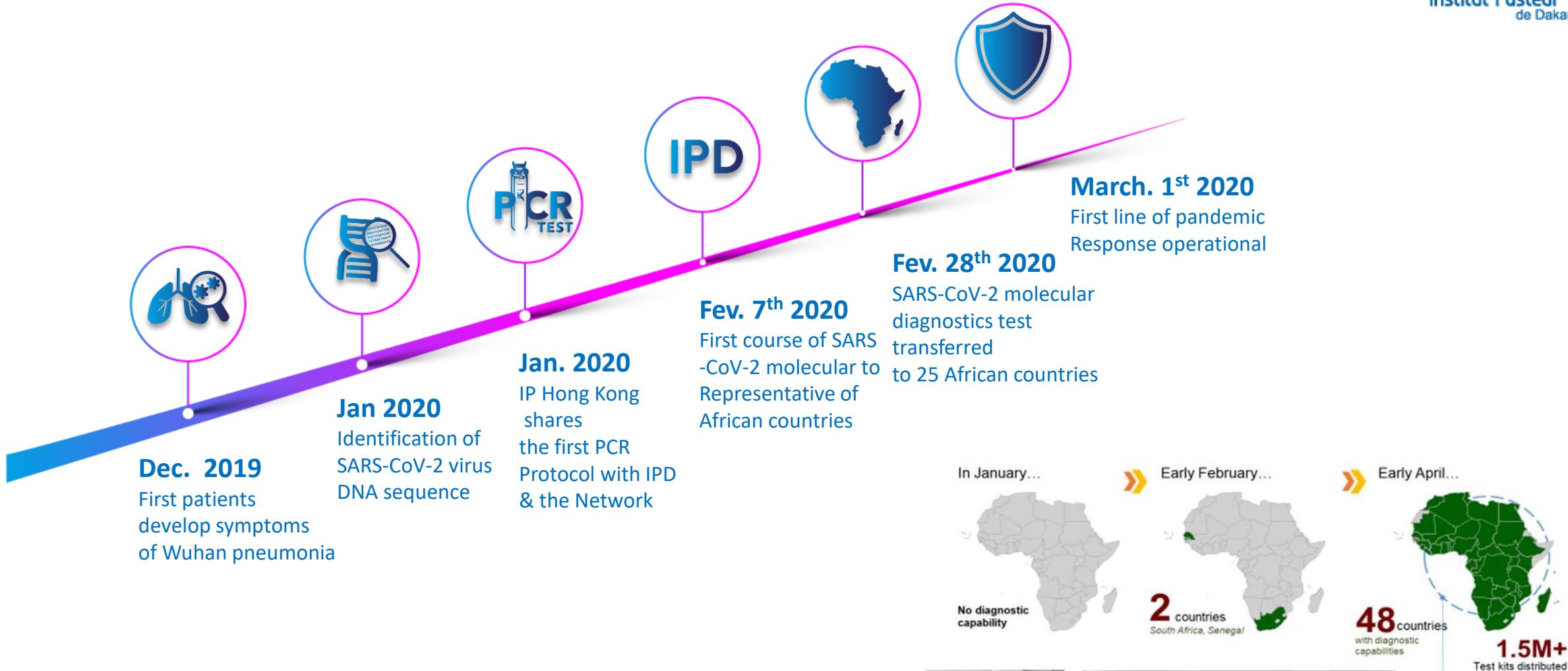


Diagnostics Approaches to COVID-19: Lessons learned & the path forward

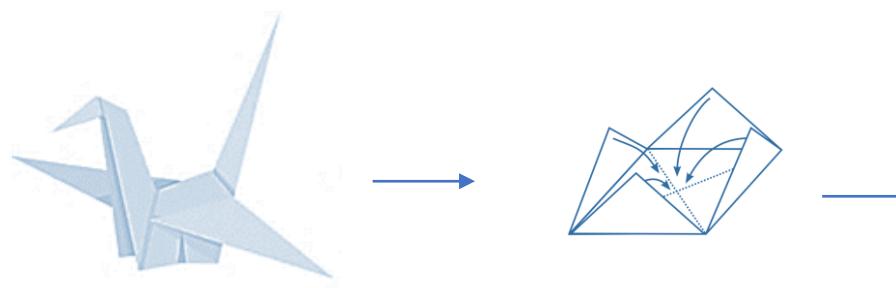
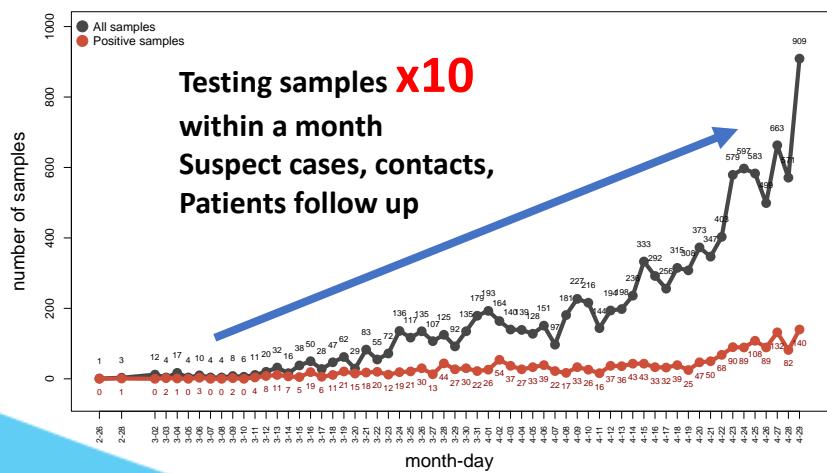
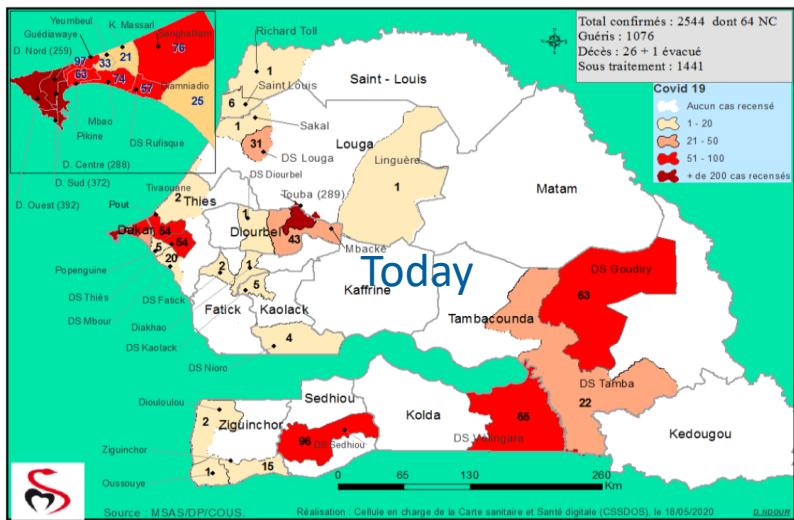
Dr Amadou A SALL
WHO Pathogen X meeting
29-30 august 2022



How it started?



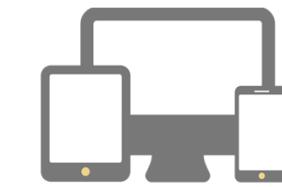
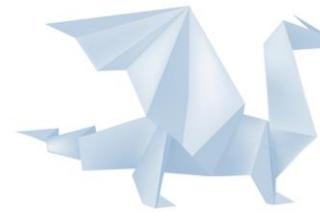
Scale up testing



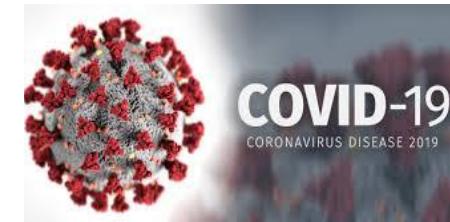
Innovation



Manufacturing RDT



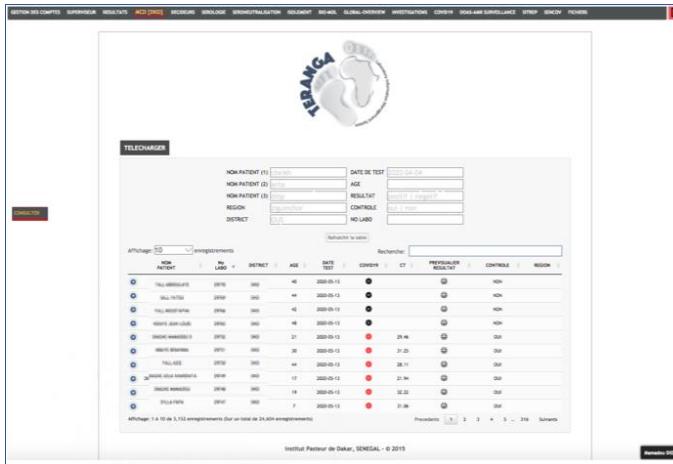
Digitalization



Decentralization



Digital Platform



Chief Medical Officer

RESEARCHER

TELECHARGER

NOM PATIENT (1) : [REDACTED] DATE DE TEST : 02-04-2020
NOM PATIENT (2) : [REDACTED] AGE : 40
NOM PATIENT (3) : [REDACTED] RESULTAT : SÉROLOGIE
REGION : [REDACTED] CONTRÔLE : NON
DISTRICT : NO LADOU REGION : [REDACTED]

ATTACHEZ : [REDACTED] Enregistrements Rechercher : [REDACTED]

NOM PATIENT	PR. LABO	DISTRICT	AGE	DATE TEST	CONDIFIR	CT	PRELIMINAIRES RÉSULTAT	VALIDEZ	CONTROLE	REGION
TALL MAMADOU	2010	NOU	40	2020-05-13						NON
TALL MAMADOU	2010	NOU	44	2020-05-13						NON
TALL MAMADOU	2010	NOU	42	2020-05-13						NON
KASSI JOURDIA	2010	NOU	48	2020-05-13						NON
DIOP ADOUESSA	2010	NOU	21	2020-05-13						NON
MAIGNEYE SENE	2010	NOU	30	2020-05-13						NON
TALL OUSSEY	2010	NOU	44	2020-05-13						NON
MAIGNEYE SENE	2010	NOU	12	2020-05-13						NON
DIOP MAMADOU	2010	NOU	19	2020-05-13						NON
TALL PAPU	2010	NOU	7	2020-05-13						NON

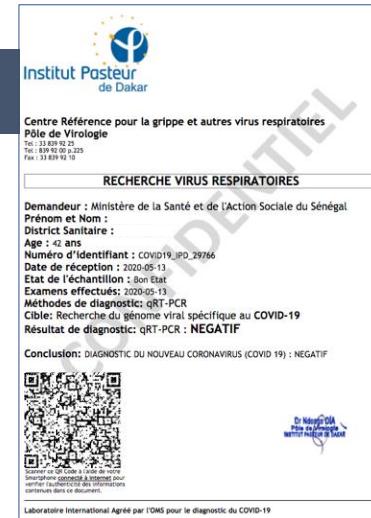
AFFICHAGE : 1 à 10 de 112 enregistrements (Sur un total de 24,000 enregistrements)

Précédent : 1 2 3 4 5 ... 200 Suivant : [REDACTED]

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Result template



Centre Référence pour la grippe et autres virus respiratoires
Pôle de Virologie
Téléphone : +221 33 839 92 23
Fax : +221 33 839 92 10

RECHERCHE VIRUS RESPIRATOIRES

Demandeur : Ministère de la Santé et de l'Action Sociale du Sénégal
Prénom et Nom :
District Sanitaire :
Age : 42 ans
Numéro d'identifiant : COVID-19_IPO_29766
Date de réception : 2020-05-11
Etat de l'échantillon : bon Etat
Examens effectués: 2020-05-13
Méthodes de diagnostic: qRT-PCR
Cible: Recherche du génome viral spécifique au COVID-19
Résultat de diagnostic: qRT-PCR : NEGATIF

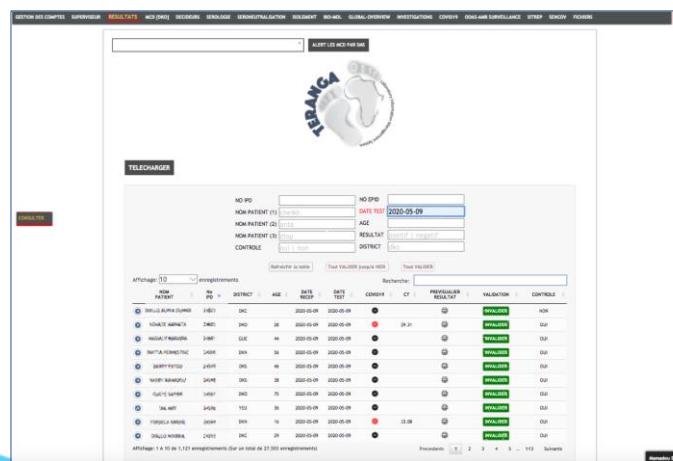
Conclusion: DIAGNOSTIC DU NOUVEAU CORONAVIRUS (COVID 19) : NEGATIF

QR code : [REDACTED]
QR code : [REDACTED]
QR code : [REDACTED]

Smartphone connecté à Internet pour recevoir les notifications relatives à ce document.

Laboratoire International Agréé par l'OMS pour le diagnostic du COVID-19

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LABORATORY MANAGEMENT SYSTEM

TELECHARGER

NOM IPO : [REDACTED] NO DTD : 2020-05-09
NOM PATIENT (1) : [REDACTED] AGE : 2020-05-09
NOM PATIENT (2) : [REDACTED] RESULTAT : SÉROLOGIE
NOM PATIENT (3) : [REDACTED] CONTRÔLE : NON
PR. LABO : [REDACTED] REGION : [REDACTED]

ATTACHEZ : [REDACTED] Enregistrements Rechercher : [REDACTED]

NOM PATIENT	PR. LABO	DISTRICT	AGE	DATE TEST	CONDIFIR	CT	PRELIMINAIRES RÉSULTAT	VALIDATION	CONTROLE	REGION
TALL ALPHONSE	2010	NOU	2020-05-09	2020-05-09				VALIDER		NON
KOULY AMARATA	2010	NOU	2020-05-09	2020-05-09				VALIDER		OUI
ISAGA MAMADOU	2010	GUE	46	2020-05-09	2020-05-09			VALIDER		OUI
MATTA KEMDIO	2010	DAK	46	2020-05-09	2020-05-09			VALIDER		OUI
SAYE FAYE	2010	DAK	46	2020-05-09	2020-05-09			VALIDER		OUI
MANI MAMADOU	2010	DAK	28	2020-05-09	2020-05-09			VALIDER		OUI
TALL MAMADOU	2010	DAK	70	2020-05-09	2020-05-09			VALIDER		OUI
FAYE MAMADOU	2010	DAK	36	2020-05-09	2020-05-09			VALIDER		OUI
TALL MAMADOU	2010	DAK	28	2020-05-09	2020-05-09			VALIDER		OUI
ISAGA MAMADOU	2010	DAK	16	2020-05-09	2020-05-09			VALIDER		OUI

AFFICHAGE : 1 à 10 de 1,121 enregistrements (Sur un total de 37,000 enregistrements)

Précédent : 1 2 3 4 5 ... 110 Suivant : [REDACTED]

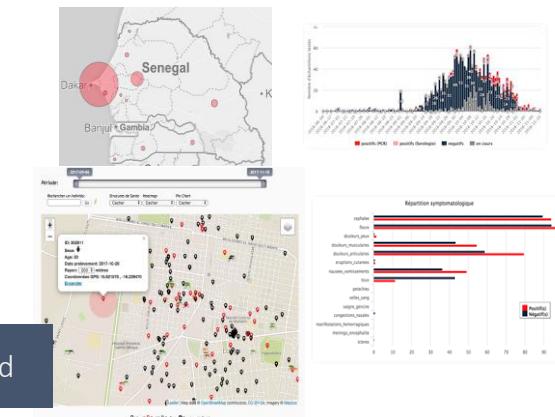
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Laboratory Module

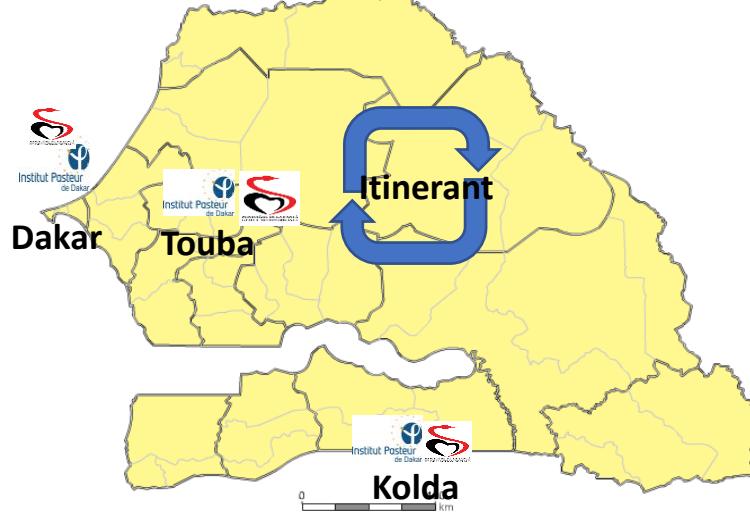


Outbreak Dashboard





Decentralization & surge capacity



- Central laboratory at the capital
- Peripheral laboratories
- Itinerant mobile laboratory as surge capacity
- Training & transfer to local Laboratories



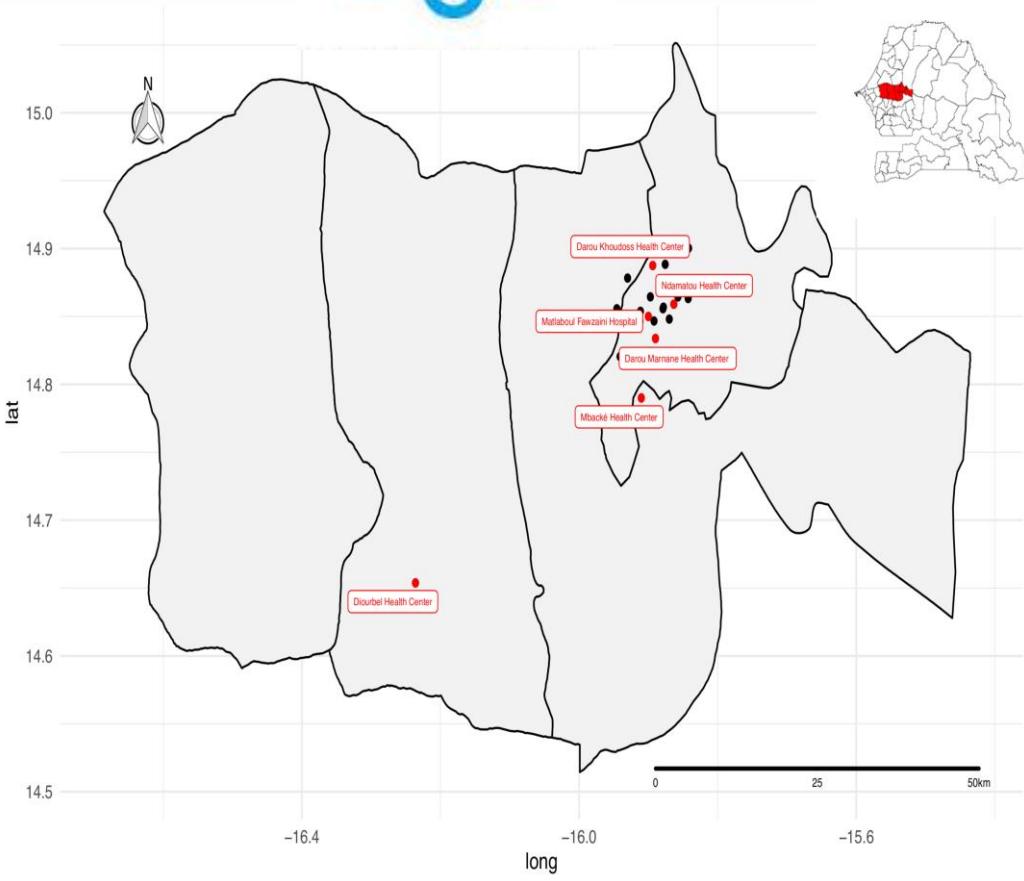
Mobility

Testing

Connectivity



Decentralization & surge capacity



Mass Gathering : The Grand Magal of Touba is the largest Muslim religious pilgrimage in West Africa (millions of people from all the world)

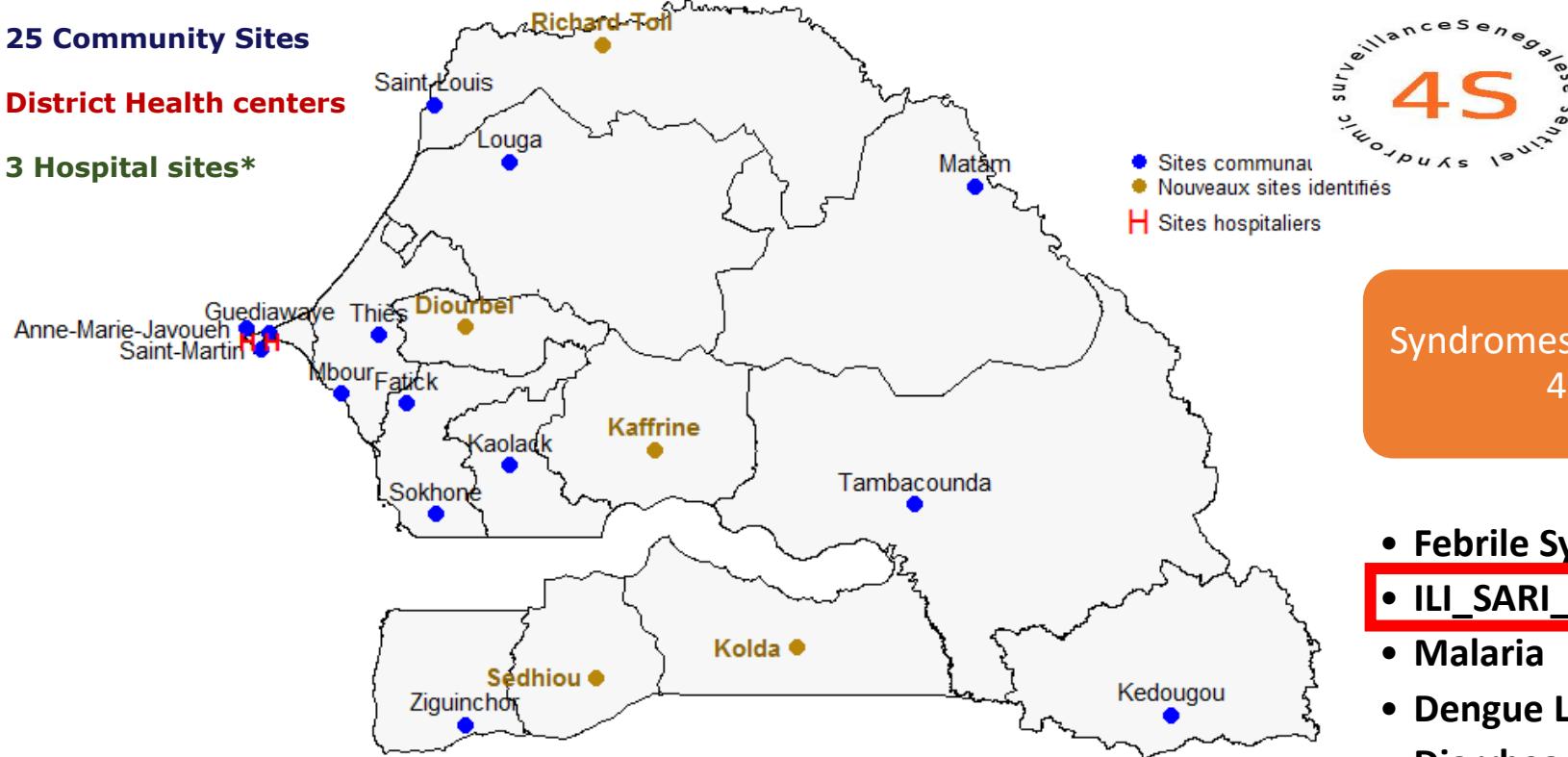


SAYTU: The first COVID-19 test produced in Senegal



Syndromic Sentinel Surveillance in Senegal (4S network)

- 25 Community Sites
- District Health centers
- 3 Hospital sites*

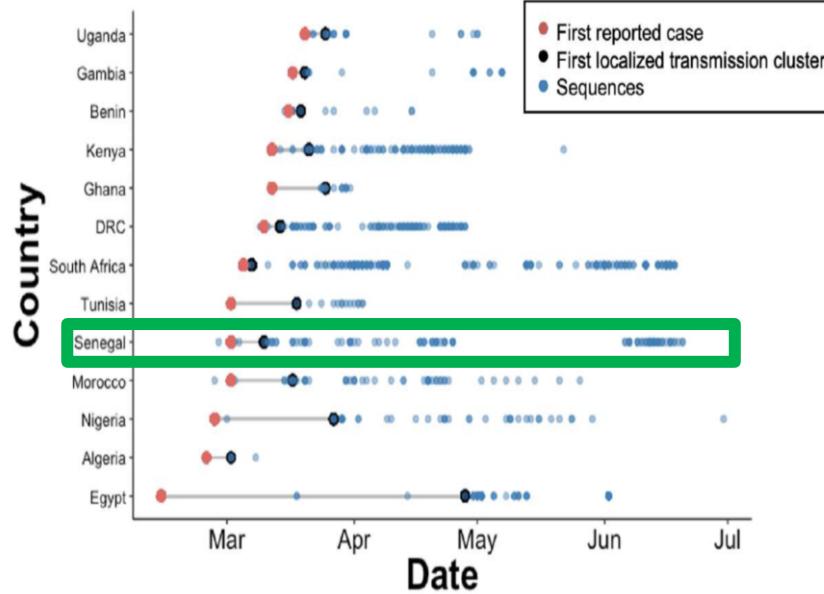


Syndromes Under surveillance
4S Network

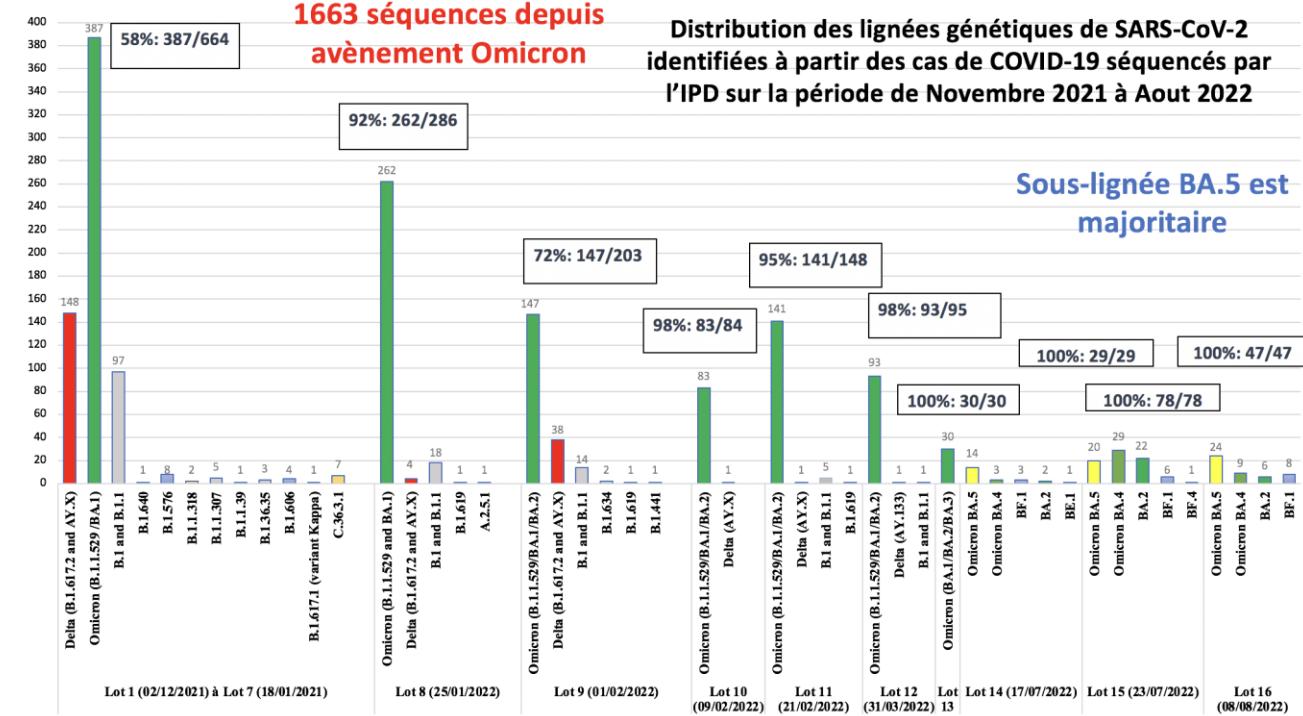
- Febrile Syndrome
- ILI_SARI_Covid-19
- Malaria
- Dengue Like Syndrome
- Diarrhea Syndrome

SARI sites*: Infectious diseases clinics, Pediatrics, ICU...

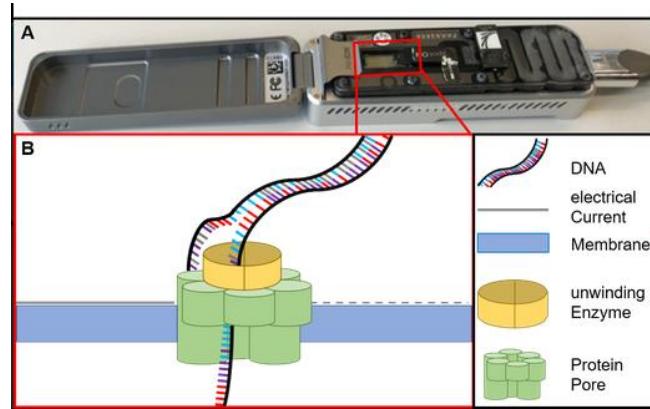
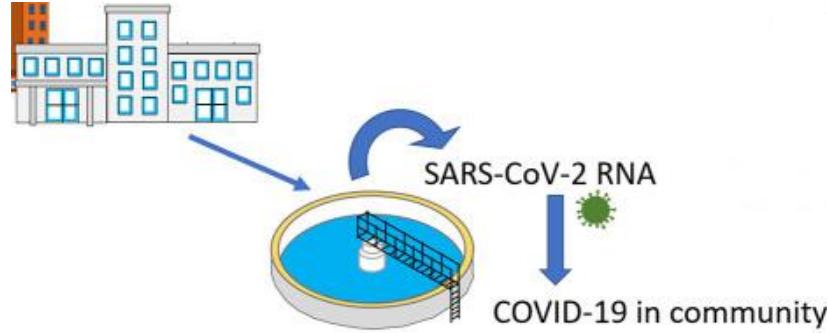
Genomics Surveillance



Tegally H and colleagues, University
of KwaZulu Natal

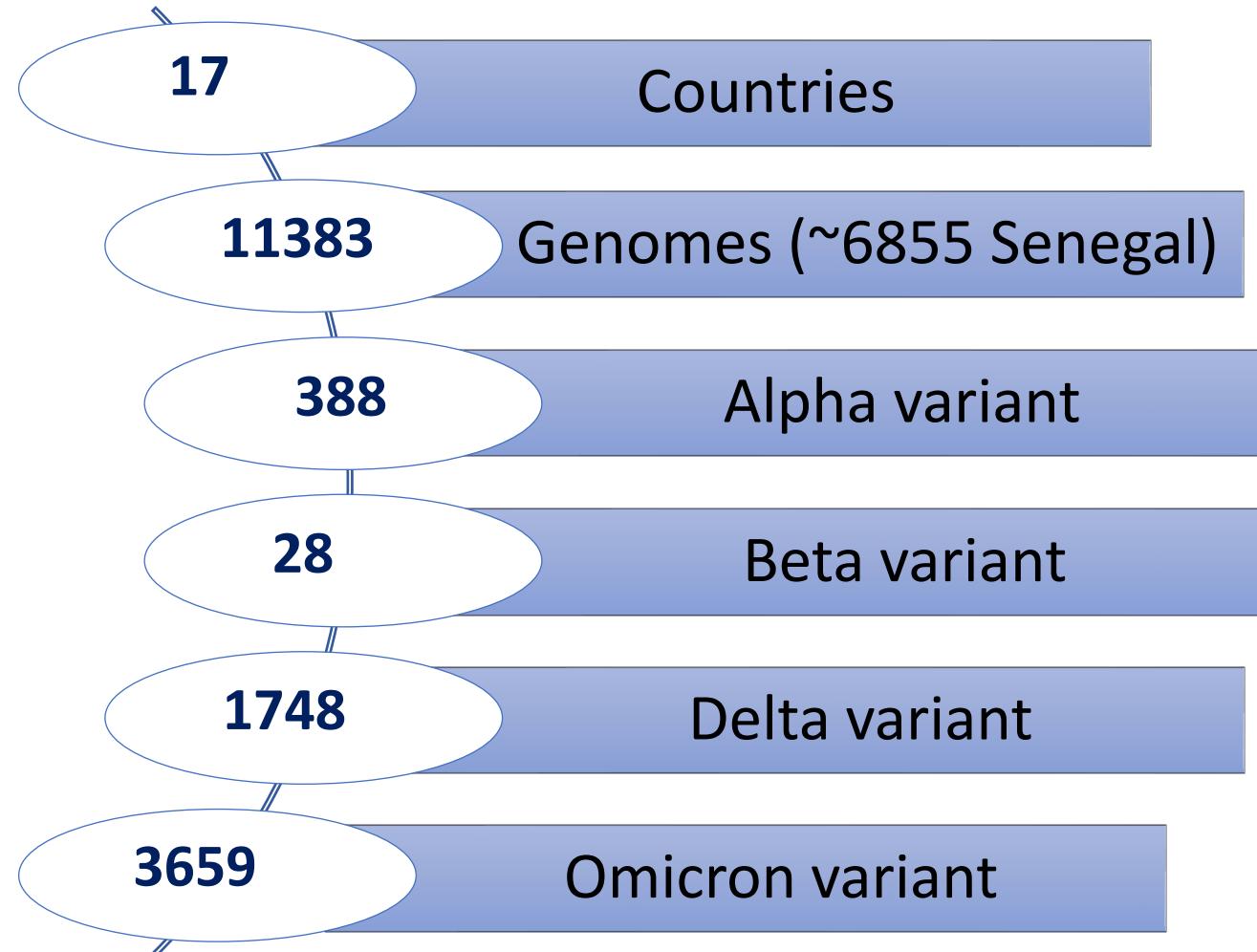


Environmental surveillance of SARS-CoV-2 from Sewage



Assess the dynamic of virus circulation in the community
Monitor the emergence or introduction of new variants to Senegal for early control measures

Regional genomic surveillance



As of 20 August 2022

More than 10.000 genome sequences generated

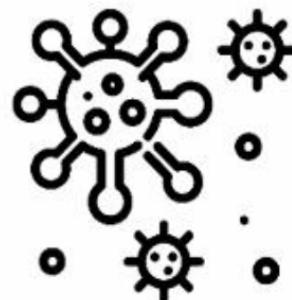
Regional genomic surveillance



Transmissibility



Vaccines



Risk of reinfection

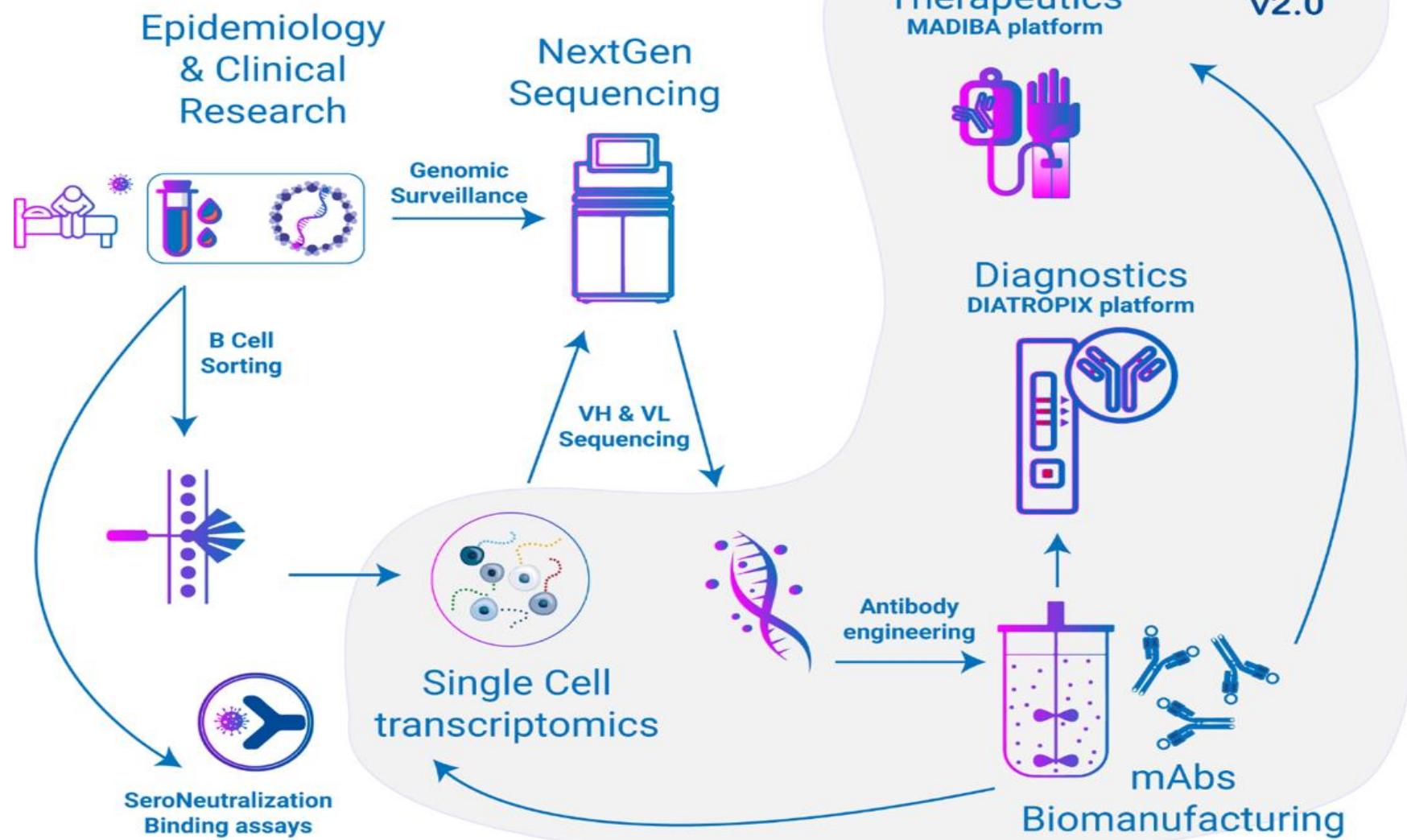


Disease severity



Diagnostics

Beyond SARS-CoV-2



Take home messages

- **Diagnostics and detection is foundational and starting point to any research & development and innovation for any new diseases**
- **Sequencing technology is key to identification, monitoring, detection of new pathogens and variants and may become more and more dominant for manufacturing of medical countermeasures**
- **Building the ecosystem that connecting surveillance, case management and R&D would make diagnostics impactful**
- **Local diagnostic capacity is key to teh first detector first responder approach**

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AFRICAIN POUR LA SANTÉ DE
LA MÈRE ET DE L'ENFANT
(CEA-SAMEF)



Dolley Jën Ndox!
Senegalese proverb