PRAESENS
CARE

Building a decentralized, global and scalable infrastructure for healthcare

Last Mile Delivery
Health & Humanitarian Logistics
November 16th, 2022

Praesens Foundation

Driven by field observations during the Ebola outbreak in West-Africa in 2014-2016, Dr. Rudi Pauwels identified the **needs for rapid, accurate and easy to use diagnostics.**

The Foundation's mission is to **provide access to health programs to communities in resource-limited settings, anywhere in the world**, including in hard-to-reach regions.

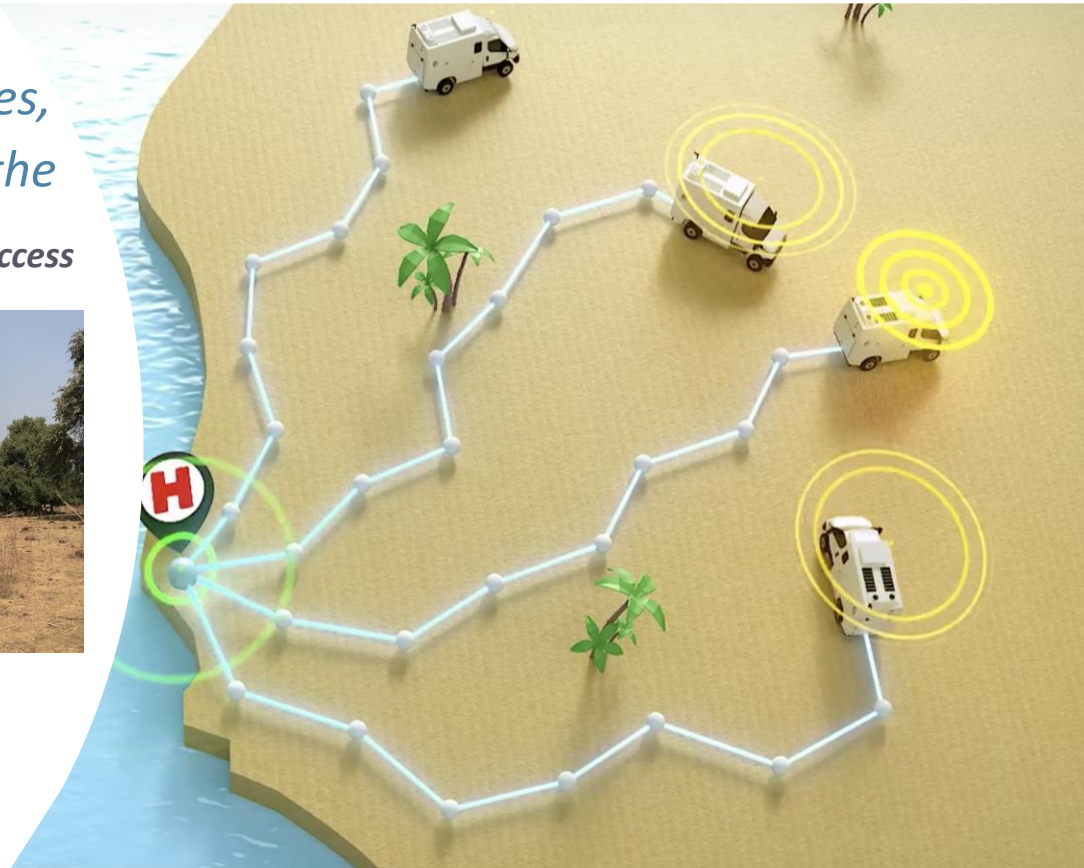
Founded in 2016, the Praesens Foundation is **a private philanthropic organization registered in Belgium and in the US 501(c) (3).**

Co-directors of the Praesens Foundation: Dr. Rudi Pauwels,
Steven Pauwels and Prof. Peter Piot (co-discovered Ebola virus,
former head UNAIDS and e London School of Hygiene and Tropical Medicine in London).

Praesens' mission

"Provide better healthcare services, anywhere, anytime to anyone in the world"

Universal Health Coverage starts with universal access



From capacity building in Senegal…

- 3 Dengue Epidemics contained, instrumental role of Mobile Lab
- On the frontlines for COVID-19 response
- Thousands of patients tested
- Active in various environments (semi-urban, rural, off-road)
- 24 local operators trained that stand-by as an Epidemic Task Force
- Support 4S National Surveillance Network: respiratory viruses and tropical fevers

Keys to success: local ownership, community engagement

Official donation of the Mobile Lab to the Institut Pasteur de Dakar in May 2018, still operating today, and responsible for the identification of about **10% of all the positive COVID19 cases in Senegal in 2021.**

… to continental scale up

MoU signed with Africa CDC with 4 pillars of collaboration

May 2018: Signature MoU Dr. Pauwels (Praesens)
and Dr. Nkengasong (Africa CDC)

October 2019: airlifting of a mobile lab to INRB in Goma,
DRC to reinforce Ebola diagnostics capabilities

BIONEAR® 3rd generation: the most polyvalent and integrated health infrastructure

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BIONEAR

1. Dual-Use (civil and military) compact **multi-terrain vehicle**
2. No installation or set-up time
3. **Secured BSL3 High Biosafety Level** with built-in isolator: safe for operator, sample and environment
4. **Self sufficient energy equipment** (generator, batteries)
5. Polyvalent, **open healthcare platform, built for genomics**
6. **Cold chain capabilities** , +4°C, -20°C and -80°C to store reagents, samples for biobanking and vaccines
7. **Compliant with the highest quality standards – ISO15189 accreditable**
8. **Connectivity:** High-speed satellite and GSM systems, customized LIMS
9. Integrated waste management
10. (Tele)maintenance

Assay Menu: On-board equipment

The Praesens Care assay menu covers most of the WHO's Essential Diagnostic List.

Rapid diagnostics, clinical chemistry and immunotesting

Rapid Diagnostic Tests (RDT)

Tecan Sunrise (serology)

Piccolo Xpress (biochemistry)

First-line testing

Temperature

Blood Pressure

Sysmex Poch-i 100 (CBC)

Molecular diagnostics

MIC (RT-qPCR)

Cepheid GeneXpert IV (MDx)

BioFire FilmArray 2.0 (Syndromic PCR)

illumina iSeq100 (Sequencer)

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Our Approach

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Routine Testing

The Praesens Care assay menu can cover most of WHO's Essential Diagnostic List.

Quality Assurance

Full capacities of laboratory-confirmed diagnosis with high quality equipment.

Outbreak Response

Deploy rapidly to locations of suspected or actual disease outbreaks (e.g., COVID-19, Dengue).

Surge Capacity

Augment national testing capacity when/where insufficient (e.g. peak Malaria season).

Monitoring

Reports of infectious diseases to provide data vital to planning interventions at the community level.

Surveillance

Gather information about circulating diseases, drug-resistance, and specific strains of pathogens.

Training

Strengthen national health system, provide (technical) training, assess gaps.

Our Impact

- Higher patient coverage
- Higher biosafety
- Quicker results close to the patients
- Accurate diagnosis for appropriate treatments
- Surge capacity and clinical decongestion
- Capacity building with qualified staff and infrastructure

INSEAD

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Scaling up Praesens Care thanks to the European Commission's and FIND's support

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- The EU Commission has supported the construction of a new fleet of BIONEARs, now fully-assembled, known as the LABPLUS AFRICA Project
- As a Mobile Lab offensive for Africa to strengthen lab capacities and partner against CBRN threats and new emerging pandemics
- FIND supports the production and deployment of one BIONEAR

FIND
Diagnosis for all

Funded by the European Union

Successful demonstrations in Senegal

Ministère de la Santé et de l'Action Sociale

National health coverage, in support of the MOH

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1. **COVID-19**
March 2020-April 2021:
> 18,000 samples tested on RT-PCR:
>3,300 confirmed positive cases;
=8% of total positive cases on national level

- Samples collected from 10 different regions
- First to confirm cases in 25 districts
- Surveillance & testing travelers

2. Detection of an **outbreak of influenza A** during the "Grand Magal", differentiated from COVID-19 cases

3. Detection of **2 cases of Dengue virus** during the "Gamou" at Medina Baye in 2021, reinforce capacities (outbreak prevention), in the past: Dengue outbreaks in Louga (2017), Fatick (2018) and Touba (2018).

Mobile Lab at Hôpital Mahtlaboul Fawzeyni, Touba

Mobile Lab at the Imam Clinique, in front of the Grande Mosque in Kaolack

Institut Pasteur de Dakar

Ziguinchor

Kaolack

Toubacouta

Ziguinchor

Kenya Pilot Study: Study Objectives

- ✓ Use of a BIONEAR to support **routine and surveillance diagnostic services for priority pathogens** in Mombasa County.
- ✓ **Deliverable: Baseline assessment**: determine capacity and utilization of diagnostic services, estimate the unmet needs will inform routing and deployments.
- ✓ **Intervention study**: introduce supportive mobile laboratory services.
- ✓ **Training:** Enhance skills of laboratory personnel and strengthen lab systems
- ✓ Determine optimal level of utilization for **different use cases**
- ✓ Assess the **impact** of deployment with concrete KPIs
- ✓ Propose a **Pricing strategy and resource-sharing model** for all stakeholders: the objective is to test the sustainability and validate a number of hypotheses on volumes, service packages and our competitive advantage, in order to find the right positioning and balance between the existing offer in public vs private facilities.

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Our Insights

- Scale up from innovative proof-of-concept to multi-hub fleet proves to be challenging
- Funding is competitive and despite COVID-19, investments in epidemic preparedness are not popular, integrate it into routine testing programs for improved access
- New approach: Sustainable resource-sharing model – philanthropy is limiting
- USP: **polyvalent platform**, optimal use (both in peace and crisis time) and quality management system
- **Service package** are as important as the BIONEAR (hardware): training, maintenance, supply chain
- **Reliable local implementation partners** are key to success, preferably forge Public-Private Partnerships (involvement of MoH) to be locally embedded
- Bureaucratic and complex working environment require strong contingency plans (stock outs of reagents, power outages, cold chain capacities are hard to find, etc.)

→ **Agility, optimism and strong alliances to overcome these barriers and support SDG 3 to achieve Universal Health Coverage**

Last-mile, near patient health services from prevention to care

Thank you!

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