IHE Mini-Connectathon in Senegal
Demonstrating health data exchange based on open standards and IT sector promotion

Mamadou Djigo (kaikai)
Abdallah Miladi (visuapps)
Babacar Fall (PatientPro)

Sponsored by

kaikai
ict4d and digital development

VISUAPPS
the visual application company

- Consulting business based in Dakar, with projects in Senegal / Benin / Togo / DRC / Nigeria
- Experience in tech 4 good in impact sectors in West Africa
- Build partnerships and align actors

- Leader in IHE national scale solutions (Austria, France…)
- 123 commulated connectathons, regular top ranking solutions
- Reference solution for EMR

Job-creation and private sector promotion funding through *Invest for Jobs* and AGHA

Invest for Jobs
Opportunities for Growth in Africa
Investing for Employment

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

AFRICAN GERMAN **HEALTH ASSOCIATION** E.V.

18 mio people
(75% under 35 y.o)

136th place IHDI
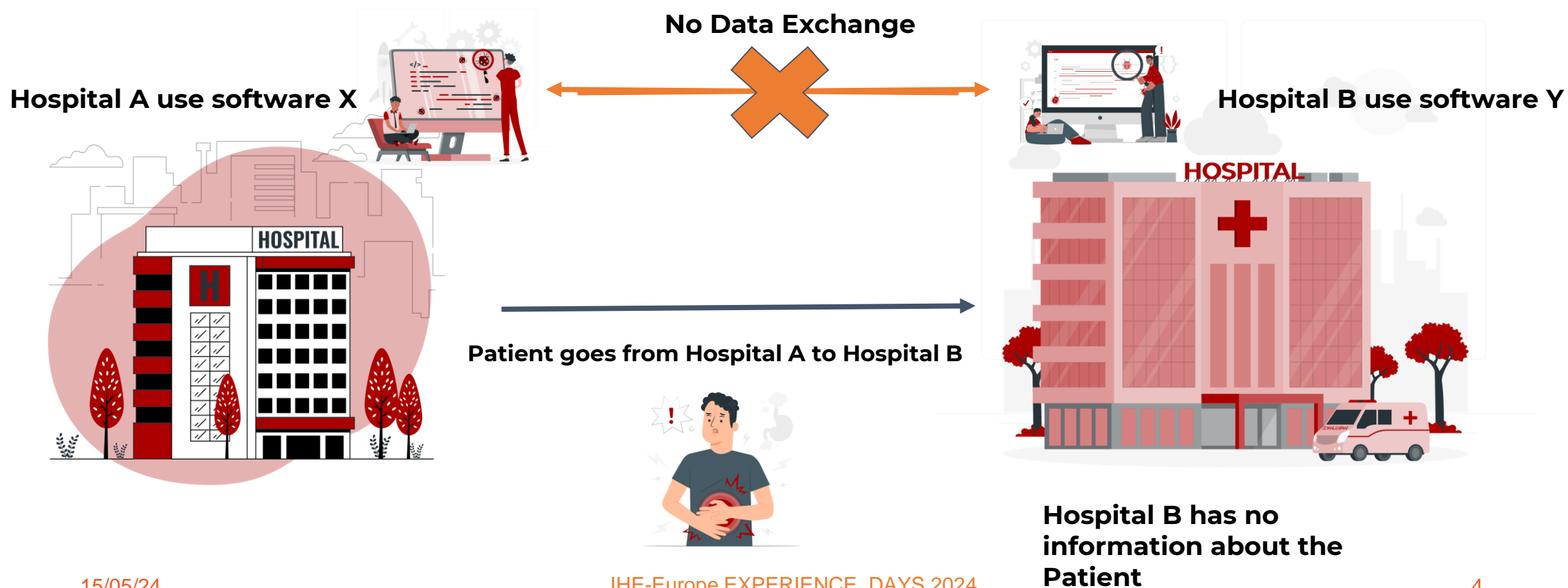(Development Index)

GDP per capita $1 598,73
(Italy $34000)

Doctors per 10000: 1.3
(Italy 42)

Regional hub for training and stability, active IT sector, good connectivity

In Senegal, specialists are concentrated in Dakar. Thus, patients from the regions often need to be referred to other hospitals. This brings additional challenges.

No Data Exchange

Hospital A use software X

Hospital B use software Y

Patient goes from Hospital A to Hospital B

Hospital B has no information about the Patient

Electronic Medical Records as Government priority
1 pillar of 2018-2023 digital health strategic plan, as means to improve care and reduce costs

Active IT Private Sector / Solutions deployed in Hospitals
Collaboration of IT private sector association with MoH during DaanCovid response initiative
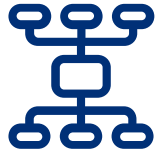
Health systems challenges
Concentration of specialities in Dakar, not all hospitals have all specialities. High cost of mobility

IHE methodology
Strong foundation for EMR
- interoperability
- avoid vendor lock-in
- guarantee conformity of solutions

Objectives

Demonstrate the feasibility of exchanging medical data in Senegal using IHE standards and methodologies.

Training a selection of Senegalese HIS providers in IHE, interoperability tests and patient onboarding.

Exploring the regulatory and institutional steps required to set up a national IHE architecture

Setting up a Senegalese IHE community

Creation of a technical working group with representatives from

- MoH e-health and IT unit, as well as other departments (public hospitals)
- MoICT & e-gov agency (SENUM)
- Data protection agency
- Hospitals
- Private IT Sector association (OPTIC)

setting up of the working group on at MoH - January 2023

Identification of 3 local firms which were providing IT services to health care providers (hospitals & clinics)

- With existing customers in larger healthcare facilities
- With a local team
- Previous engagement with MoH (under Daancovid initiative)

Signature of NDA / Contract / Support agreement for training / tests

IHE Overview for Decision-maker and partners

- What is IHE? Why interoperability?

Technical training (2 days)

- IHE deep-dive (FHIR)
- Managing patient demographics with IHE
- Managing patient health records with IHE
- Inter-community management of medical documents and patient demographics with IHE
- Security and Privacy with IHE

Followed by mentoring of HIS providers by IHE expert to integrate data standards and connect to reference / training system

Testing of solutions against reference system

- Same methodology as larger connectathons
- External monitor for verification of tests (Masi)
- Test documentation
- **All 3 HIS providers each passed all 8 tests!**

Performed tests

- Time Client for Consistent Time (CT)
- Secure Application for Audit Trail and Node Authentication (ATNA)
- Authorization Client for Internet User Authorization (IUA)
- Patient Identity Source for Patient Identifier Cross-referencing for mobile (PIXm)
- Patient Demographics Consumer for Patient Demographics Query for Mobile (PDQm)
- Document Source for Mobile access to Health Documents (MHD)
- Document Consumer for Mobile access to Health Docs (MHD)

Day 3: Exchange session with decision makers

Testinstance	HIS-Provider	Testcase	Link	Status
1	Eyone	ATNA Questionaire	TI-1-ATNA_MetaTest-Eyone.docx	Verified
2	Medsen	ATNA Questionaire	TI-2-ATNA_MetaTest-Medsen.docx	Verified
3	PatientPro	ATNA Questionaire	TI-3-ATNA_MetaTest-PatientPro.docx	Verified
4	Eyone	Consistent Time	TI-4-ConsistentTime-Eyone	Verified
5	Medsen	Consistent Time	TI-5-ConsistentTime-Medsen	Verified
6	PatientPro	Consistent Time	TI-6-ConsistentTime-PatientPro	Verified
7	Eyone	Internet User Authentication	TI-7-IUA-Eyone	Verified
8	Medsen	Internet User Authentication	TI-8-IUA-Medsen	Verified
9	PatientPro	Internet User Authentication	TI-9-IUA-PatientPro	Verified
10	Eyone	PIXm	TI-10-PIXm-Eyone	Verified
11	Medsen	PIXm	TI-11-PIXm-Medsen	Verified
12	PatientPro	PIXm	TI-12-PIXm-PatientPro	Verified
13	Eyone	PDQm	TI-13-PDQm-Eyone	Verified
14	Medsen	PDQm	TI-14-PDQm-Medsen	Verified
15	PatientPro	PDQm	TI-15-PDQm-PatientPro	Verified
16	Eyone	Document-Submit	TI-16-Document_Submit-Eyone	Verified
17	Medsen	Document-Submit	TI-17-Document_Submit-Medsen	Verified
18	PatientPro	Document-Submit	TI-18-Document_Submit-PatientPro	Verified
19	Eyone	Find Documents	TI-19-FindDocuments-Eyone	Verified
20	Medsen	Find Documents	TI-20-FindDocuments-Medsen	Verified
21	PatientPro	Find Documents	TI-21-FindDocuments-PatientPro	Verified
22	Eyone	Retrieve Documents	TI-22-RetrieveDocuments-Eyone	Verified
23	Medsen	Retrieve Documents	TI-23-RetrieveDocuments-Medsen	Verified
24	PatientPro	Retrieve Documents	TI-24-RetrieveDocuments-PatientPro	Verified

Lessons learned

Stakeholder engagement is key
It's never just a technical project, MoH participation challenges

Open & collaborative approach
It takes many actors to create markets / EMR

Demonstrate results, not just concepts
A failed prototype is better than a nice feasibility study

Communicate and Disseminate
Include non-technical & decision-makers, broader public

Adapt the methodology
Google Sheets & Drive as Test management and results

Be open about limitations
Governance & Business model, integration with HMIS, Patient consent & data access etc needs to be figured out

- Participation of Senegalese HIS providers in IHE Europe Connectathon ✅

- Capitalisation of results by other projects in Senegal

  - Integration with existing e-health programs

  - Incentives for other health care provider to adopt interoperable solutions

  - Suggest governance and business model for health information exchange

- Develop a scalable and replicable model for private sector promotion & interoperability

- West African (panafrican) IHE community with private & public sector

Talk to us!

abdallah.miladi@visuapps.com | djigo@kaikai.dev | nils@kaikai.dev
bfall@patientpro.com | henri.gueye@eyone.net | ndeyetalla.dioum@medsen.sn