



## Building a baseline of health facility data with OpenStreetMap

Next Generation Internet COMMONS WORKSHOP 2024:

**CO-CREATING DIGITAL COMMONS PRIORITIES FOR EUROPE'S DIGITAL DECADE**



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@sharehealthdata



## Currently baseline health facility data is inaccurate and difficult to maintain

'..despite decades of investments in health information systems, few countries have accurate, up-to-date information on the availability of health services in both public and private facilities, or their capacity, or “readiness”, to provide quality services. '



### **WHO Harmonized health facility assessment (HHFA)**

<https://www.who.int/data/data-collection-tools/harmonized-health-facility-assessment/>



# The OpenStreetMap opportunity

Healthsites.io and OpenStreetMap provide the Spatial Data Infrastructure necessary to improve health facility data quality.



**healthsites.io**





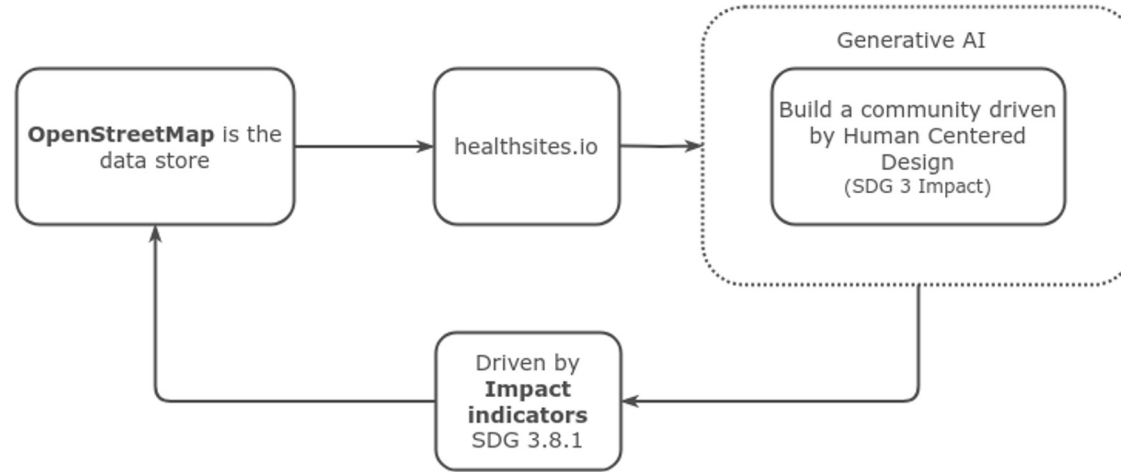
# Significant project milestones:

- **A baseline standard for health facility data**  
2016 - International Committee of the Red Cross
- **OpenStreetmap is the data store**  
2018 - Digital Square (PATH) Global Goods
- **Emergency Health Data Validation campaign**  
2022 - COVIDaction Senegal

No	Key	Value
1	<a href="#">amenity</a>	clinic, doctors, hospital, dentist, pharmacy
2	<a href="#">healthcare</a>	doctor, pharmacy, hospital, clinic, dentist, physiotherapist, alternative, laboratory, optometrist, rehabilitation, blood_donation, birthing_center
3	<a href="#">healthcare:speciality</a>	biology, blood_check, clinical_pathology, diagnostic_radiology, medical_physics, medical_engineering, radiology
4	<a href="#">name</a>	<name of health facility>
5	<a href="#">operator</a>	<name of operator>
6	<a href="#">operator:type</a>	public, private, community, religious, government, ngo, combination
7	<a href="#">addr:full</a>	<full address>
8	<a href="#">contact:phone</a>	<phone number>
9	<a href="#">operational_status</a>	operational, non_operational, unknown
10	<a href="#">opening_hours</a>	<days/times of opening>
11	<a href="#">beds</a>	<number of beds>
12	<a href="#">staff_count:doctors</a>	<number of doctors>
13	<a href="#">staff_count:nurses</a>	<number of nurses>
14	<a href="#">healthcare:equipment</a>	ultrasound, mri, x_ray, dialysis, operating_theater, laboratory, imaging_equipment, intensive_care_unit, emergency_department
15	<a href="#">dispensing</a>	yes, no
16	<a href="#">wheelchair</a>	yes, no
17	<a href="#">emergency</a>	yes, no
18	<a href="#">insurance:health</a>	none, public, private, unknown
19	<a href="#">water_source</a>	well, water_works, manual_pump, powered_pump, groundwater, rain
20	<a href="#">electricity</a>	grid, generator, solar, other, none
21	<a href="#">url</a>	<url of source data>
22	<a href="#">source</a>	<source of data>



# A data collaborative driven by Human Centered Design



- Support the **Data Governance policy** of the Ministry of Health
- **Prioritized user stories** drive the development of the data
- Stakeholders in the health cluster **share data to address priority user stories**





# Emergency health mapping campaign

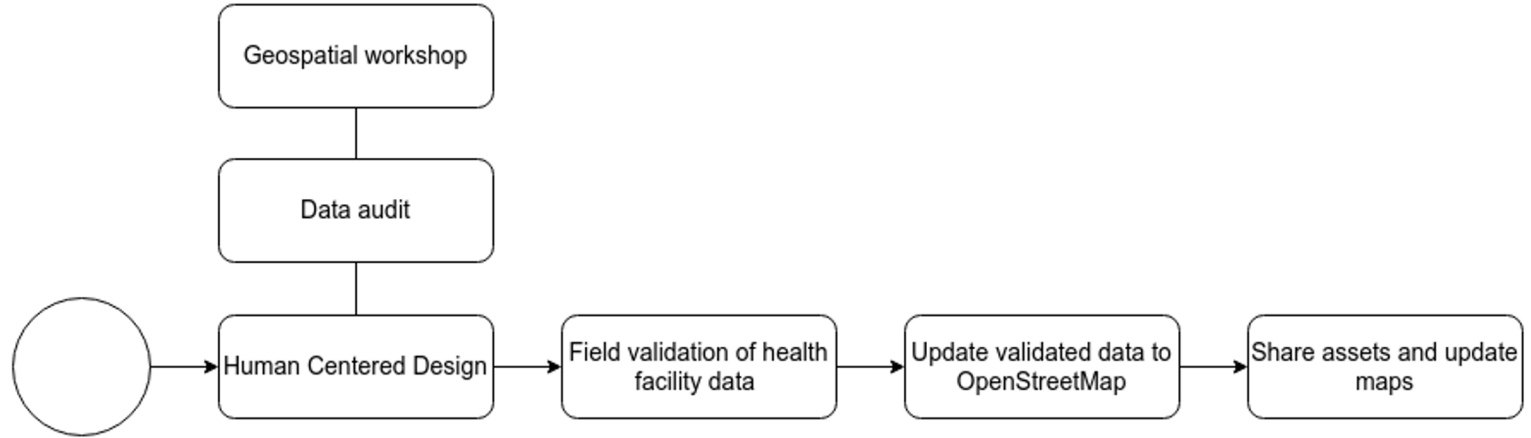


<https://github.com/healthsites/emergency-health-data/wiki/Emergency-health-mapping-campaign>



# Emergency health mapping campaign

## Process flow





# Human Centered Design to drive the data validation process

Persona - Pregnant Mother

As a pregnant mom,  
I want to know where the nearest **emergency health service** is  
so I can plan for potential complications during childbirth.

Supporting attributes in OpenStreetMap

- Healthcare/Amenity type is either a **clinic** or **doctors** or **hospital**
- There is at least one **bed**
- **Emergency** health status = yes
- A **telephone number**

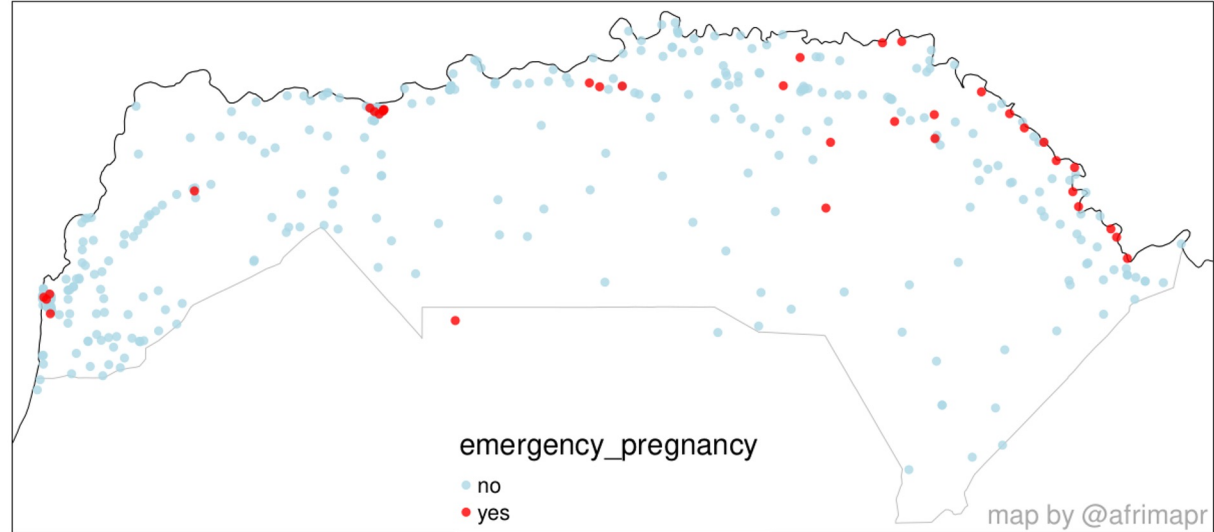




# Human Centered Design to drive the data validation process



Facilities likely to support emergency pregnancy needs, OSM–Senegal survey 2022





## Data audit - compare health facility names from different lists

<https://github.com/afriMAPr/senegal-healthsites-2022/>

cous_names	dprs_names
EPS1 de Richard Toll	EPS 1 Richard Toll
Centre de Sante de Dagana	CS Dagana
Centre de Sante de Saint Louis	CS Saint - Louis
Centre de Sante Amadou Malick Gaye	?
Centre de Sante de Pete	[-] CS Pete
Centre de santé de Richard Toll	CS Richard Toll
HOPITAL REGIONAL DE SAINT LOUIS	EPS2 de Saint Louis
CHR NDioum	?Antenne de Ndioum

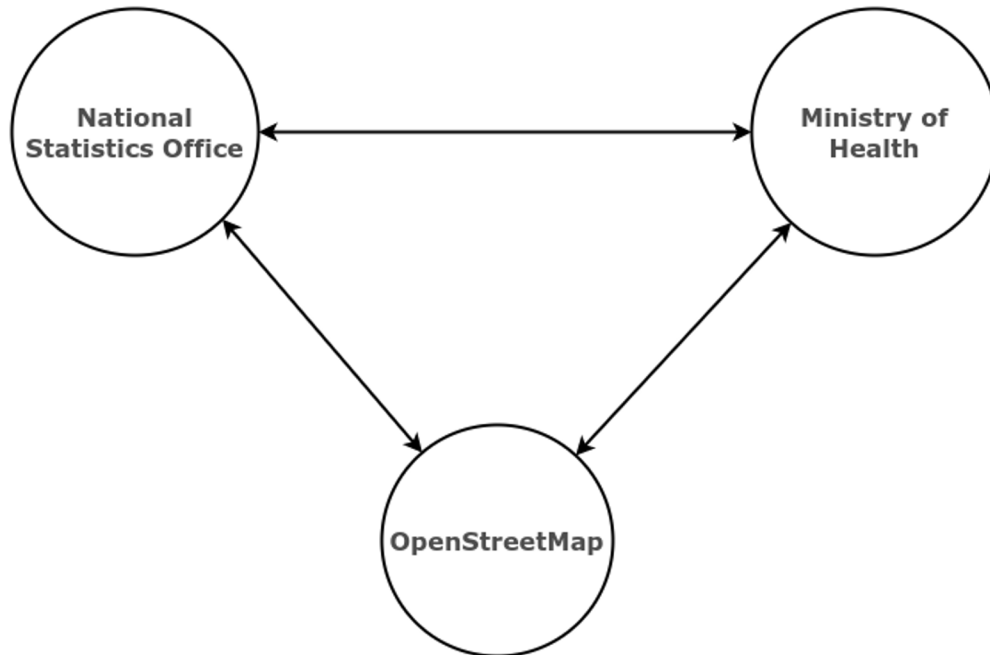


## Data audit - confirm the naming convention

Senegal level	Senegal type	Senegal abbreviation	OSM category
1	Hopital	HP	Hospital
1	Etablissement public de Santé 1 (départementale)	EPS 1	Hospital
1	Etablissement public de Santé 2 (régionale)	EPS 2	Hospital
1	Etablissement public de Santé 3 (nationale)	EPS 3	Hospital
2	Centre de Santé	CS	Clinic
2	District de Sanitaire	DS	Clinic
3	Poste de Santé	PS	Doctors
3	Case de Santé	Case de	Doctors



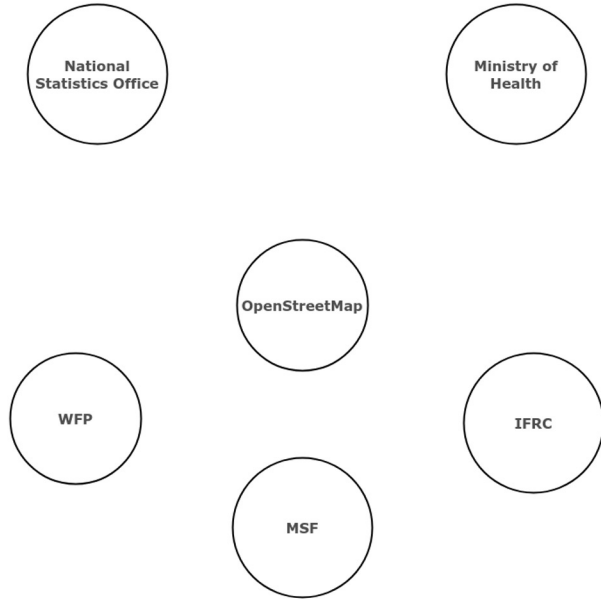
# Data interoperability



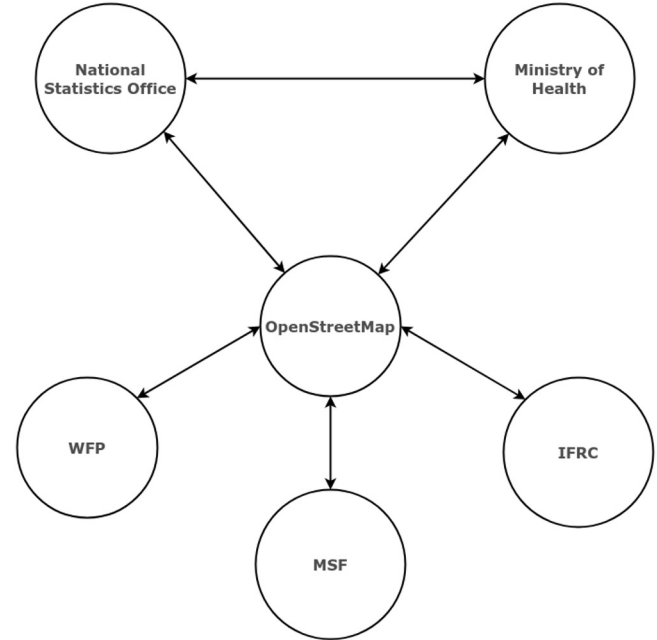


# Data interoperability

- Name?
- Emergency facility?
- Bed count?



- Name - posté de sante de walaldé
- Emergency facility? - Yes
- Bed count? - 5





# Geospatial workshop - Identify and develop information products

OpenStreetMap mappings - General QGIS - Information products





# Field validation of available services



4G 10:04

HS OSM Facili...

**Operator Type**  
OSM Key: operator:type

- ☐ Public
- ☐ Private
- ☐ Community
- ☐ Religious
- ☐ Government
- ☐ NGO
- ☐ Combination





# Validated data updated to OpenStreetMap

Activities Google Chrome Thu 9 Nov 17:28

Node: cabinet de sante seyidina mouhamed (psl) de la vallée du fleuve (9989554731)

openstreetmap.org/node/9989554731#map=13/16.3952/-14.3200

OCHA open data howto MRIIDS Channel 4-4oD Imported Fro... invest

All Bookmarks

OpenStreetMap Edit History Export

GPS Traces User Diaries Communities Copyright Help About markherring

**Node: cabinet de sante seyidina mouhamed (psl) de la vallée du fleuve (9989554731)**

Version #1

#senegal #covid-19 #emergency-health-data-validation #healthsites

Edited about 1 year ago by Lamine Ndiaye  
Changeset #125591076  
Location: 16.3959786, -14.3259875

**Tags**

addr:full	Aéré Lao/Pété
amenity	clinic
beds	5
contact:phone	776597564
electricity	grid
emergency	yes
healthcare	doctor, clinic
insurance:health	public private
name	cabinet de sante seyidina mouhamed (psl) de la vallée du fleuve
opening_hours	24/7
operational_status	operational





## Call to action > Scale SDG 3.8.1

Target Audience:

Companies and organisations interested in accurate health facility data.

Get in contact to engage the **Healthsites Logical Model**

