# Mukono Municipal Council, Uganda
### (Hospital)

**Software Engineering Intern**
Feb 2020 -
Omkar Bahiwal, 23

# Mukono Municipal Council

- About - https://mukonomunicipalcouncil.go.ug/

- Central Government Organisation for the Town of Mukono.

- Includes all the Parish, Villages Under Mukono Town and Their Health Center

- Placement Under IT - Administration Department.

# Project Work

- Development of Local Web Application for OPD Process flow Digitisation.

- Patient Queueing System.

- IT Administration Tasks Automation.

- Network Management.

**Health Facility Demographic Data:** FY 20_19_/20_20_
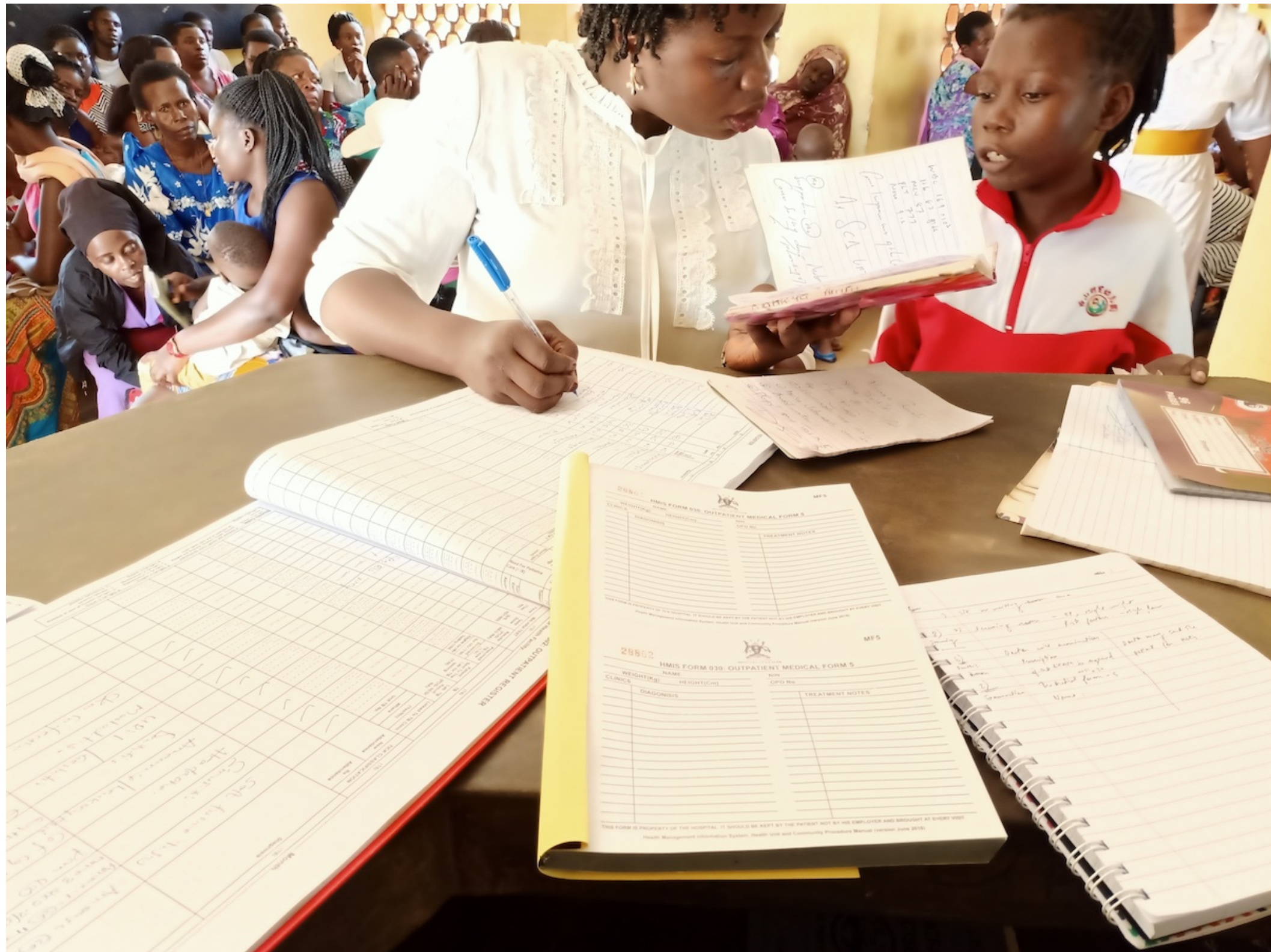
**Total Catchment Population:** _79,197_

**District:** _MUKONO_ **Subcounty:** _CENTRAL DIVISON_

**Health Facility Name:** _MUKONO HC IV_

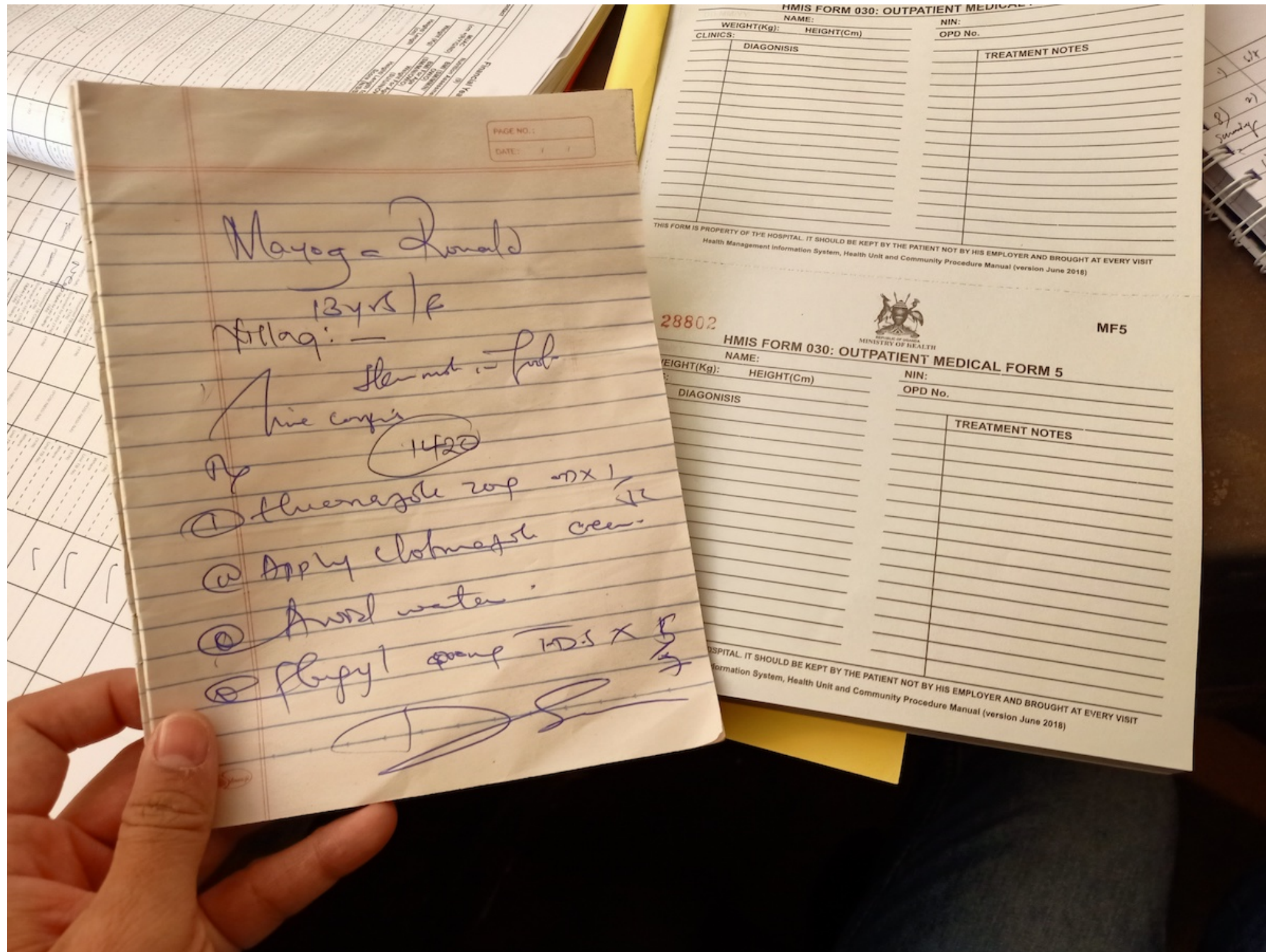| Population Category | Family Care Practice | Target Proportion | Target Population Annual | Target Population Monthly |
|---|---|---|---|---|
| Women of Child Bearing Age (WCBA: 15 - 49 Years) | Immunisation (TD) | 23% | 18,215 | 1,518 |
| Pregnant Women | Antenatal Care Immunisation (Td) Deliveries | 5% | 3960 | 330 |
| 0 - 11 Months (Live Births) | Immunisation At Birth | 4.85% | 3841 | 320 |
| 0 - 11 Months (Surviving Infants) | Immunisation From 6 weeks | 4.30% | 3405 | 284 |
| 6 - 11 Months | Vitamin A (100,000 I.U) | 1.93% | 1529 | 127 |
| 0 - 59 Months | Polio Campaign | 20.50% | 16235 | 1353 |
| 6 - 59 Months | Vitamin A Measles Campaign | 18.13% | 14358 | 1197 |
| 12 - 59 Months | Vitamin A (200,000 I.U) Deworming | 16.20% | 12830 | 1069 |
| 1 - 14 Years | Deworming | 41.7% | 33025 | 2752 |
| Girls 10 Years | Immunisation (HPV) | 1.54% | 1220 | 102 |
| Non Pregnant Women | Family Planning Immunisation (Td) | 18% | 14255 | 1188 |

Demographics Data for Pregnancy Ward Shows 1518 Patients Monthly. Records Say Approx. 4500 Patients Monthly in OPD

Reception

Doctor's Prescription

Pharmacy

Lab Sample Collection Records

HMIS Form 3b

## Ministry Of Health
### National Tuberculosis and Leprosy Control Program (NTLP)
### NATIONAL TB REFERENCE LABORATORY (NTRL)
Gene Xpert Request and Report Form

25334

(829)

Referring Health Unit __Magojje Hciii__  District __mpow__  Region __centriy__
Patient's Name __Alino Norah__  Sex __F__  Age __35__
Sub County __Lipesito__  LC I/Village __Flaqq__
Patient's Phone Contact _____  Next of Kin contact _____  8720cy
Date Sputum collected __25/2/2020__  Time Sputum Collected _____
Sample Collected by __Mbxuello Serer__  Phone Contact __078279800__

**TYPE OF PATIENT**

☐ HIV positive          ☐ Smear Pos at 2 months      ☐ Health workers
☐ Children (0-14 years) ☐ Treatment Failure          ☐ Pregnant/ lactating mothers
☐ Diabetic              ☐ Relapse                    ☐ Prisoners & refugees
☐ Contact of DR TB      ☐ Lost to follow up          ☐ Others (specify)_____

| HIV STATUS | SPUTUM SMEAR RESULTS | CHEST X-RAY STATUS |
|---|---|---|
| Positive ☐ | Negative ☐ | unknown ☐ |
| Negative ☑ | Positive Scanty ☐ | Abnormal ☐ |
| Unknown ☐ | Positive 1+ ☐ | Normal ☐ |
| | positive 2+ ☐ | |
| | Positive 3+ ☐ | |
| | Unknown ☐ | |

Requesting Clinician __Amina__  Date __25/2/2022__  Phone No. __0782249899__

Gene Xpert site _____  District _____

Sample Received by _____  Date _____

**XPERT MTB/RIF RESULTS**

| XPERT MTB RESULTS | RIF RESISTANCE STATUS |
|---|---|
| MTB Not Detected ☐ | Not Applicable ☐ |
| MTB Detected ☑ | Rif Resistance not Detected ☑ |
| Invalid ☐ | Rif Resistance Detected ☐ |
| Error ☐ | Indeterminate ☐ |
| No result ☐ m | |

Date Tested __26.2.20__

MTB DETECTED MEDIUM

Name of Lab. personnel __Fuvo__  Signature _____  Date __26.2.20__
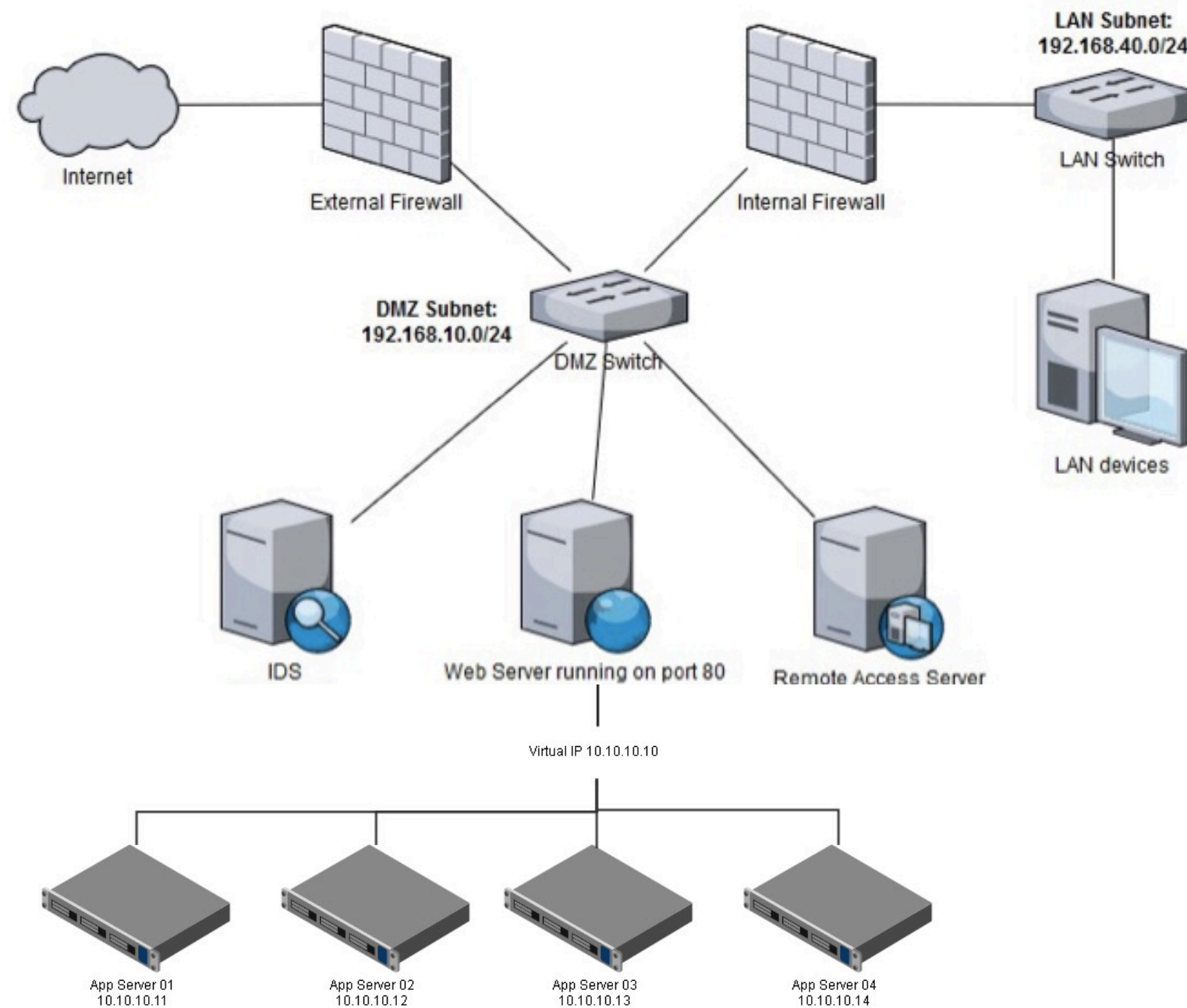
Version 15th Dec 2016

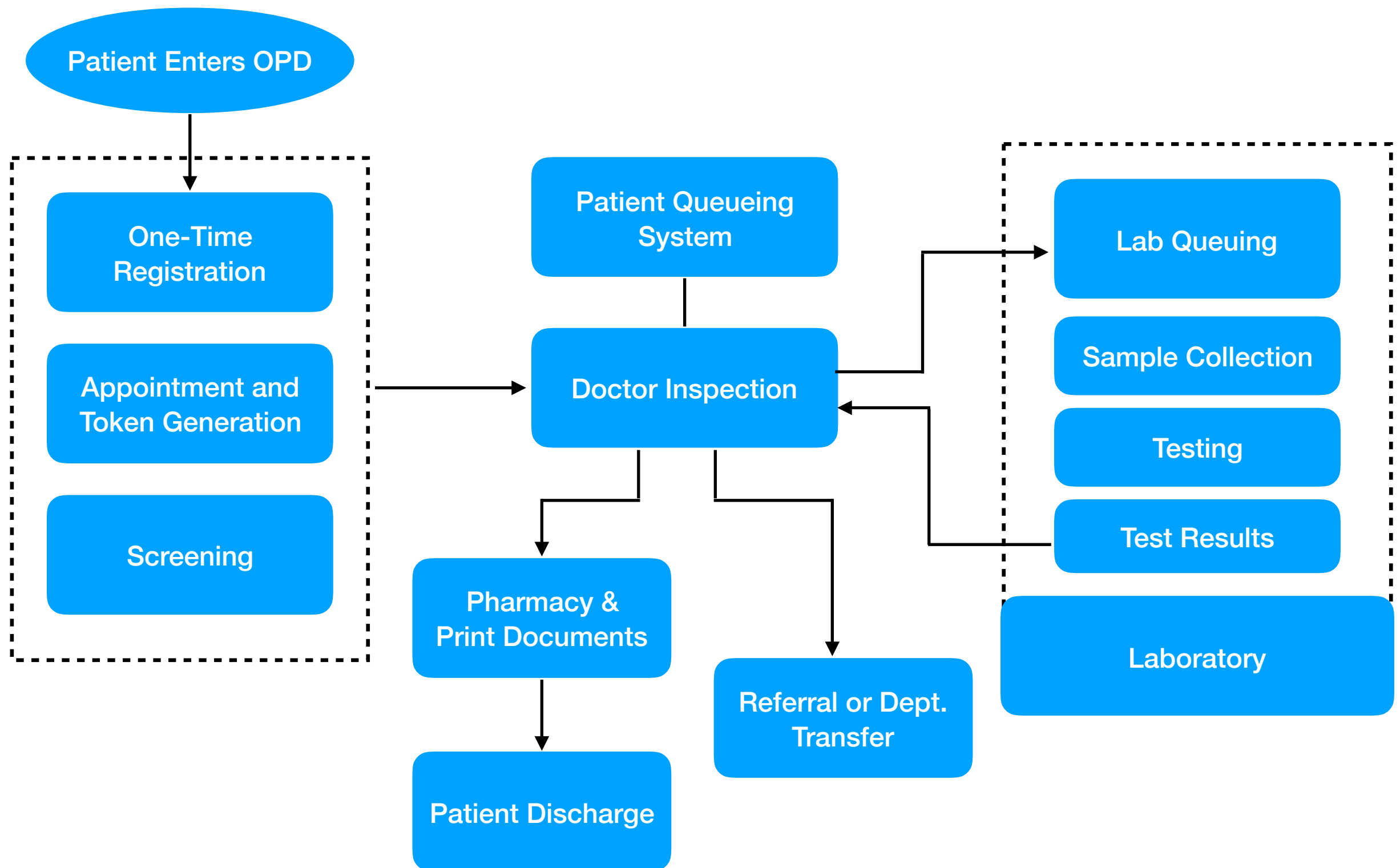# Lab Results

# Technical Details

- Implementation of Locally Hosted Web Application.

- Web Server : Apache / IIS 9 with PHP

- Database Server : MySQL

- Windows Server 2019

- According to WHO Standards

Internet

External Firewall

Internal Firewall

LAN Subnet:
192.168.40.0/24

LAN Switch

DMZ Subnet:
192.168.10.0/24

DMZ Switch

LAN devices

IDS

Web Server running on port 80

Remote Access Server

Virtual IP 10.10.10.10

App Server 01
10.10.10.11

App Server 02
10.10.10.12

App Server 03
10.10.10.13

App Server 04
10.10.10.14

# LAN and Hosting Infrastructure in the Hospital

**OPD Management System**

# ScreenShots

# Patient One Time Registration using National ID or Passport (at Reception)

# Appointment and Token Generation (at Reception)
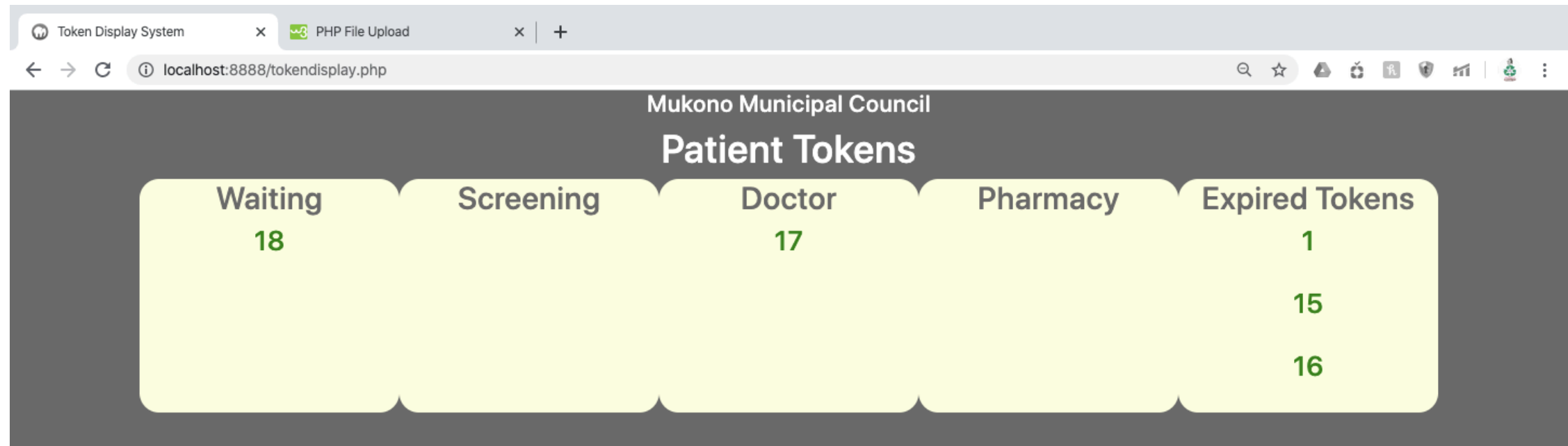
# Token Display Near Waiting Area
# (Patient Queueing)

# Screening

# Doctor's Interface

# Lab (Test) Interface

# Pharmacy and Dispensary

# Database in MySQL

# Next Stages and Scope

- Healthcare Analytics and DSS

- Cloud Based hosting for remote supervision.

- Implementation of the OPD System in Other Healthcare Centres in MMC

# Thank You!