GCGMH IT Roadmap

Needs

- Reporting accuracy and availability
  - Inventory
  - Census
  - EMR
- Streamlined processes
  - OPD
  - PR
  - Document archiving (HO, Communications, Memos, etc)
  - Technical Support
- Reduction of paperwork
  - HRIS
  - DTR
- Modernize IT Infrastructure
  - Storage and access to EMR
  - Secure IT assets and data

Implement: Task and Project Management System

Implement a task and project management system to address:

- Streamlined PR tracking
- Document archiving and tracking (HO, External Letters, Memos, etc)
- Technical Support Requests
- Meeting minutes
- Notifications

Implement: PTIS and POMIS

PTIS: Personnel Transaction Information System

- Addresses reduction of paperwork for HR
- Digitalize HR Records
- Simplify DTR procedure

POMIS: Procurement Operations and Management Information System

- PR Process is linked to PPMP
- Reduces issues when initiating a PR
- Tracking of approval process will be at the Task Management Software

Implement: OPD Workflow and Queue

The challenge of the OPD is the volume of transactions that happens. Opportunity to streamline the process involves:

- Use of iHOMIS by the doctors/nurses at the station
- Creation of queueing policy controlled by the system implemented
- Creation of a guide for the patient that is printed at the first step of the process to guide him on the procedures, queue schedule, laboratory procedures, etc
- August 2019 to October 2019 - analyze existing process and define new workflow.
- November 2019 - Start of development
- January 2020 - Pilot runs

Implement: Data Analytics

The challenge with big organizations is the access to relevant data that is transformed into information that the decision maker can use at pre-defined schedule or adhoc.

- Addresses Reporting Accuracy and Availability
  - Ability to customize reporting and complements the basic reports provided by existing systems like iHOMIS
- Frees up admin assistants from generating reports

Implement: EMR System

EMR system will have the following features:

- iHOMIS data will be associated with scanned medical records, laboratory results, radiology results, etc
- Doctors have access to the EMR system

Costs

Task and Project Management (Bitrix24):

- Free trial for 12 users (cloud based, no time limit)
- On-premise on time purchase for 50 users $2990
- No need to renew license unless adding users within 1 year
- Free Option: Open Source Software (openproject.org)

Data Analytics (Qlik):

- Free trial for 1 data developer, 5 data users (cloud based, no time limit)
- No need to by license yet until we breach the 200MB data limit
- Apache Superset is Free and we can transition to it later

Costs

PTIS and POMIS - Free from KMITS/DOH

OPD Workflow and Queue - To be developed by GCGMH IT Team

IT Infrastructure

- Data Center Php10M to Php15M
  - Secured, Temperature and Humidity Controlled
  - High data rates and future ready cabling (fiber optic and CAT6A)
  - Backup power for continuous availability
  - Two sites needed (Tagbilaran and Cortes) - mutually backing up each other.

Costs

Website Implementation

- Email: Free from DICT
- Website: Free from DICT or Php15,000/year for commercially available hosting service
- FB Page -- free

Timelines

Project Management:

- Use trial version for pilot run (September)
- Initiate PR for purchase of on-premise license (September)
- Installation of software (November 2019)
- Training of all other users (November 2019-December 2019)
- Full use (January 2020)

Timelines

PTIS, POMIS:

- Request from DOH KMITS - Aug 2019
- Currently waiting for approval from KMITS
- Deployment: Immediately

Timeline: Data Analytics

Use of free trial version of Qlik: Immediately

Data preparation and report preparation will be done on each report that is needed on a regular basis. Approximately one week per report depending on the data sources needed. The idea is to make the reports regularly generated in an automated or semi-automated manner with minimal human intervention required.

Future implementation: An open source and free system called Apache Superset will be deployed for unlimited user access. (2020Q1)

Reports to be prioritized: Inventory levels of medicines (Sep 2019)

Timeline: EMR

October 2019 - Web Sased System Prototype - User Interface for Doctors and other users

November 2019 - Data link from iHOMIS and other systems and start of associating scanned medical records to iHOMIS data.

December 2019 - Pilot Deployment and Development of Reporting Capability

January 2020 - Start of rollout, streamlining and optimization

April 2020 - Full deployment

Resources needed: manpower to tag scanned medical records to associated iHOMIS data, Server (defined together with the data center)

Timeline: Website

October 2019 - Start of Design Work

December 2019 - Completion

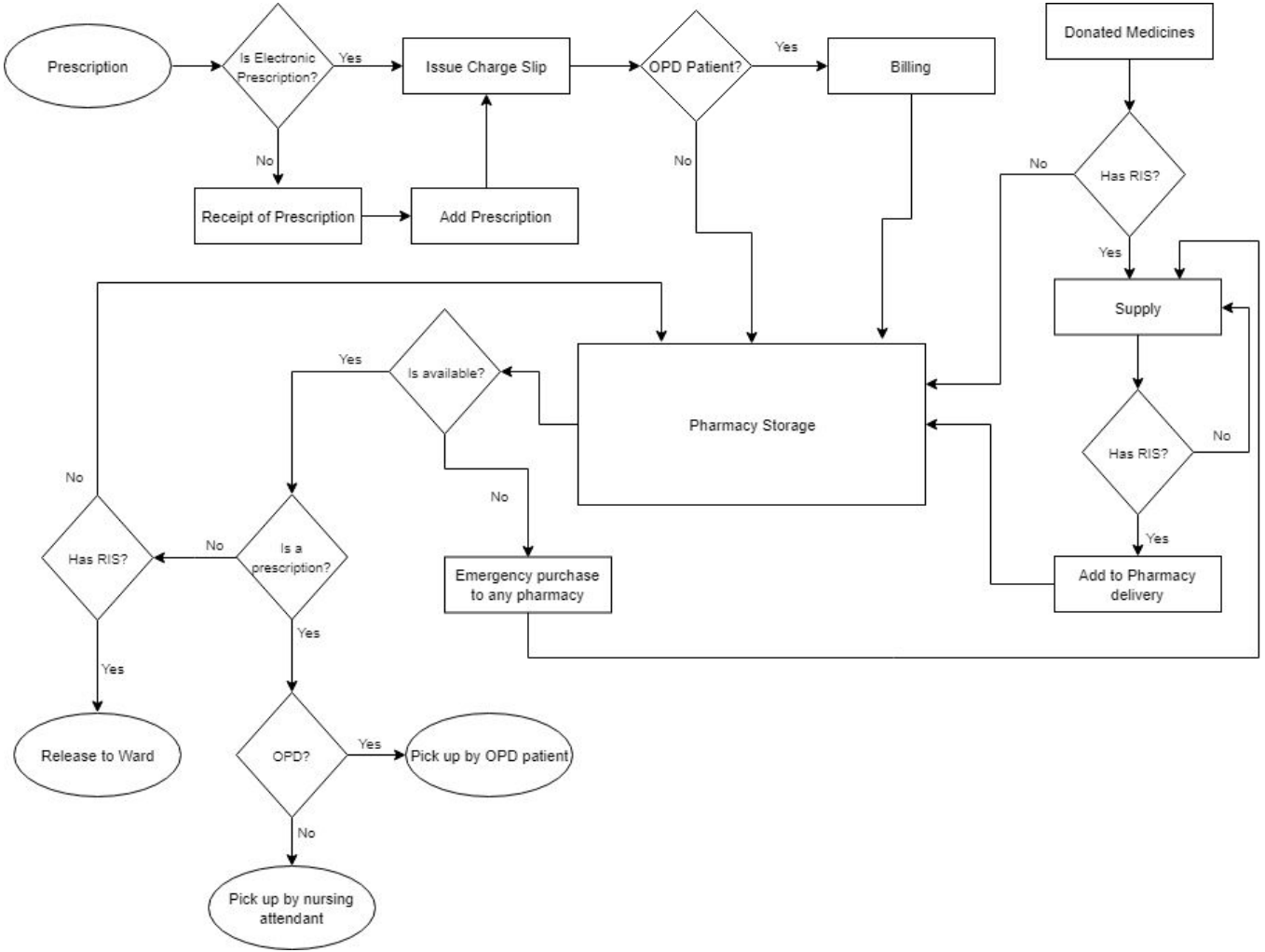
Inclusion:

- Website with responsive design
- FB Page linked to website
- Email @gcgmh.gov.ph (% email server at DICT) -- assigned to individual users authorized for communications
- Webserver (% DICT webserver or a subscription)
- FB page maintenance

Pharmacy Inventory

The Pharmacy used to have procedures that contributes to inaccuracy of inventory data:

1. Emergency purchases were not counted as regular inventory (corrected in July)
2. Prescriptions for OPD patients were issued before payment was made. If patient does not pay, the issued medicines need to be returned in the system. Sometimes patients return at later dates (Corrected in July)
3. Doctors can prescribe medicines with zero inventory (Corrected in August)
4. E-cart medicines could not be tracked by Pharmacy (To be corrected in inventory report (plan: September 2019)
5. Staff at pharmacy still prefers to do manual recording


Prescription
Is Electronic Prescription?
Yes
No
Issue Charge Slip
Receipt of Prescription
Add Prescription
OPD Patient?
Yes
No
Billing
Donated Medicines
Has RIS?
No
Yes
Supply
Has RIS?
No
Yes
Add to Pharmacy delivery
Pharmacy Storage
Is available?
Yes
No
Emergency purchase to any pharmacy
Has RIS?
No
Yes
Is a prescription?
No
Yes
Release to Ward
OPD?
Yes
Pick up by OPD patient
No
Pick up by nursing attendant

OPD -- Activities and observations so far

Data study -- started

Review of existing procedure -- started

Proposed idea -- patient guide (printed on premise, customized to patient needs)

Data accuracy need to be emphasized to people involved in OPD

- Doctor assignment is not accurate
- Diagnosis not encoded at the clinic
- Window 8 looks overwhelming at certain times of the day (morning and after lunch)

OPD Clinics with computers

Animal Bite (Door 1) & Surgical (Door 2)

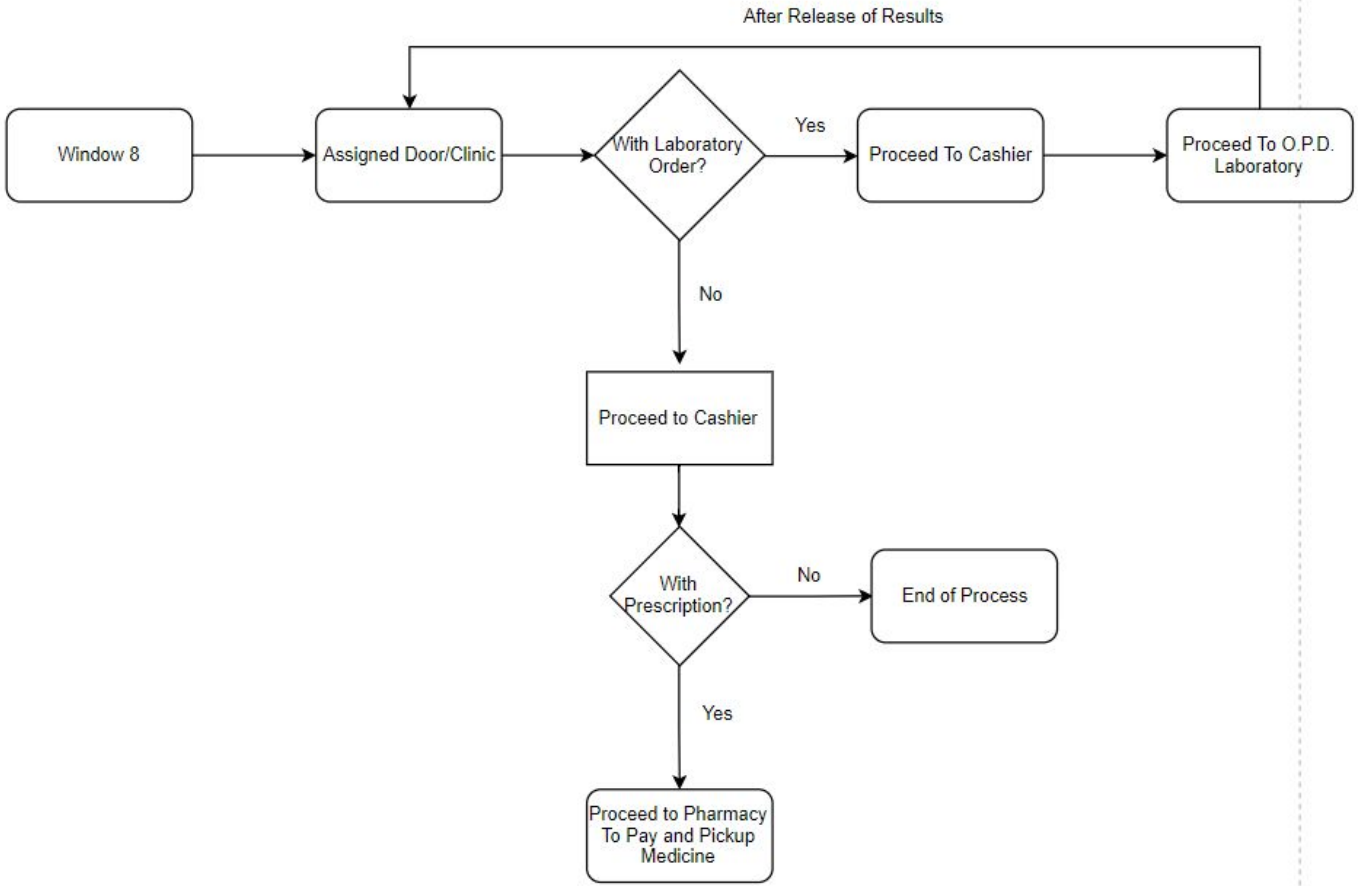
- 1 computer & printer
- 1 Doctor (O.P.D. Head Doctor)

Dental Department (Door 3)

- 1 Computer & Printer
- 4 Doctors

Internal Medicine (Door 6)

- 1 Computer & Printer
- 4 Doctors


After Release of Results
Window 8
Assigned Door/Clinic
With Laboratory Order?
Yes
Proceed To Cashier
Proceed To O.P.D. Laboratory
No
Proceed to Cashier
With Prescription?
No
End of Process
Yes
Proceed to Pharmacy To Pay and Pickup Medicine