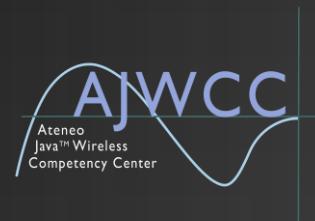




thinkOPEN Pre-Hackathon  
New World Hotel. 04.08.2016

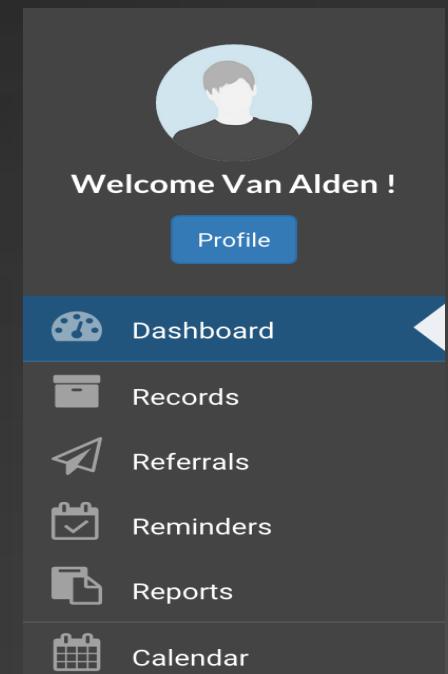
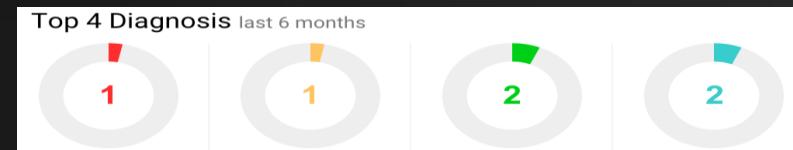
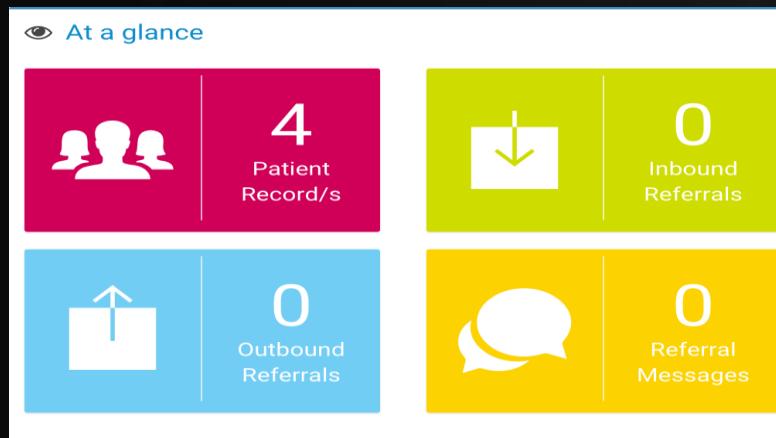




DISRUPTING HEALTH CARE and DIGITAL DIVIDE  
TRANSFORMING LIVES

## From SHINE to SHINE OS+

**SHINE (Secured Health Information Network and Exchange)** was deployed in 2011, SHINE OS+ in 2014 to city health centers, rural health units, district hospitals, and tertiary referral hospitals in Iloilo, Cebu, Quezon City, Binangonan Rizal and Muntinlupa City.



## Locations Powered by

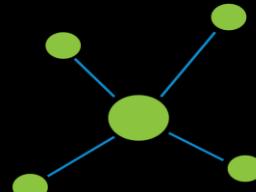
Quezon City

San Juan City

Pasay City

Bacolod City

Iloilo City



# SHINE OS +

Binangonan Rizal

Cebu City



# Number of Records

## Quezon City

Krus na Ligas = 210

## San Juan City

Cardinal Santos MC = 280

## Bacolod City

Dr. Geolingo = 1078

## Pasay City

Kalayaan Health Center= 2944

## Iloilo City

Zarraga RHU = 13645

Dumangas RHU = 6362

Tigbauan RHU = 5638

Miagao RHU = 5422

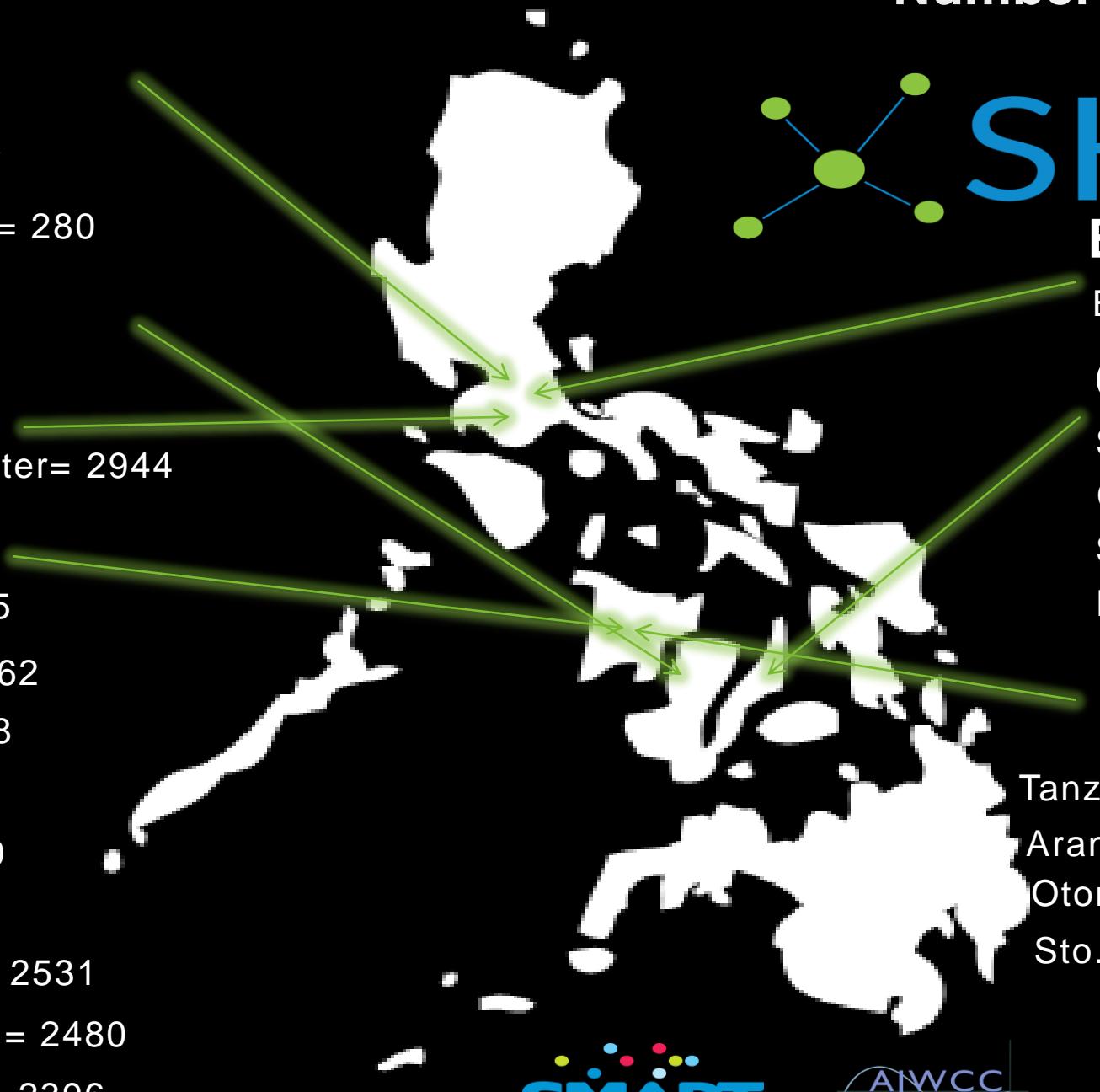
Leganes RHU = 4090

Pavia Iloilo = 3158

Jaro Health Center = 2531

Lapaz Health Center = 2480

Molo Health Center = 2396



**SHINE OS +**

## Binangongan Rizal

Barangay Tagpos = 3038

## Cebu City

Samboan MHO = 7143

Cordova BHS = 4087

San Remegio RHU= 3981

Igbaras MHO= 3280

Santander RHU= 1569

## Iloilo City Part II

Tanza Health Center = 2268

Aranador, Iloilo City = 2183

Oton MHO = 1755

Sto. Rosario MHO = 1681



**SHINE OS +**

Total Number of Records  
95, 464

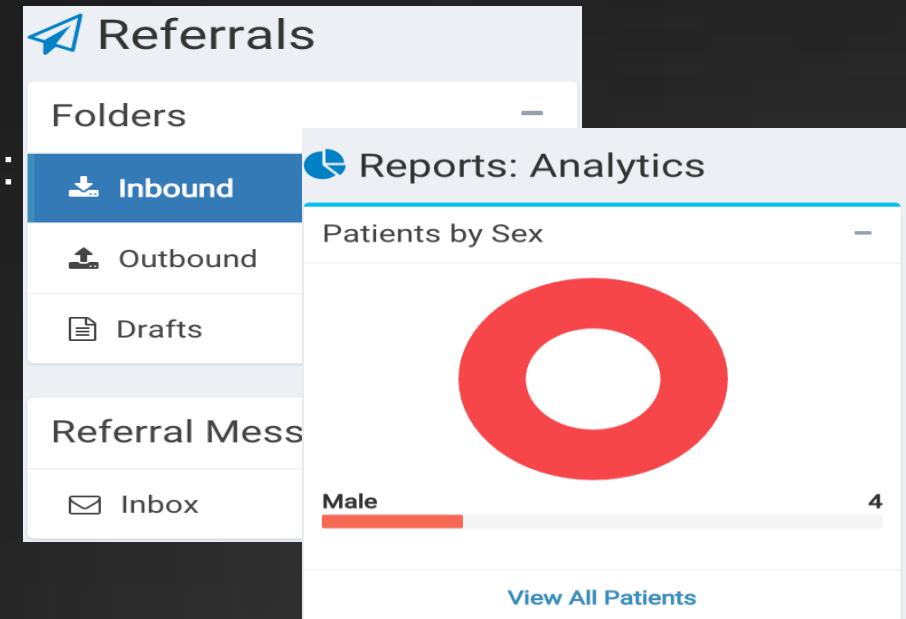




DISRUPTING HEALTH CARE and DIGITAL DIVIDE  
TRANSFORMING LIVES

## From SHINE to SHINE OS+

SHINE OS+'s best features, more known as the 4 Rs, include: **Recording** patient information with consultation and diagnosis capabilities. **Reminding** patients of their next appointments. **Referring** patients to specialists, laboratories, hospitals, clinics and the like. And lastly, producing **Reports** required by DOH such as the FHSIS reports.



The figure displays three screenshots of the SHINE OS+ application interface. The top-left screenshot shows the 'Reminders & Broadcasts' page with a table titled 'Reminders' and columns for Recipient, Subject, Appointment, Notification, and Status. The message 'No data available in table' is displayed. The bottom-left screenshot shows the 'Records' page with a table and columns for Patient Name, Gender, Age, Birthdate, Family Folder, Barangay, Actions, Edit, and Delete. The patient record for 'Enriquez, Van Lim' is listed. The bottom-right screenshot is another view of the 'Records' page, showing the same patient details.





Van Enriaguez

[View full health record](#)

Status

Active

Recorded on

2016-02-26 18:50:38

Created by

Van Alden Enriquez

# RECORD

View recorded health data of a patient

Managing Consultation Records

Visits

Recent Consultation |

[Open Current Consultation](#)

[Add Followup](#)

March 02, 2016

Consultation Type:

Complaint:

Diagnosis:

Acute Bloody Diarrhea (PIDS - Category II)

Medical Order:

MO\_MED\_PRESCRIPTION

Attending Physician:

Dr. Van Alden Enriquez [Van's Clinic]



# REFERRAL

New Referral Information

Consultation 65572 of John Bautista

Send Referral to:

Choose providers

REF. PEDRO C. TRONCO MEMORIAL HOSPITAL (CUBMALL) West Visayas State University, Medical Center

Referral Information      Consultation Information

Referral Information

Urgency:  High Priority  Medium Priority  Low Priority

Case: Pediatrics Consultation  
Sub-Case: General Pediatrics

Referral Reasons:  Diagnosis/Treatment  Per Patient Request  
 For Work-up  No Doctor Available  
 Medico-Legal  Patient Transfer  
 Others

Method of Transport:  Ambulance  Others

Referring patients to specialists, laboratories



# REMINDER

Reminding patients of future appointments

 Appointment for Patient

Setup an appointment for your patients using this form.

**Appointment**

Reminder Type: Follow-up Consultation Appointment

Message: - Select one -

Prescription Schedule

Follow-up Consultation Appointment

Lab Exam Results Consultation

Date:

Time:  10:30 AM

Send before days: 2

Patient E-mail:

Patient Mobile Number:



# REPORT

 **Health Reports**

The Health Reports section allows you create and generate reports for your facility or practice. Reporting availability requires accreditation from these government agencies. If your facility or practice is not registered and do not have an accreditation number, the reports will not be available to you. If you believe you are accredited and want to generate this reports, please enter your accreditation number in your Facility Profile thru your account.

**» PHIE Submission**

PHIE Sync Transmission  
Click on the sync button to send your health data to DOH PHIE. Data that has been synced will not be sent to PHIE anymore. Only new records and those that has been modified.

**Sync with PHIE (Coming soon)**

**» FHSIS Reports**

DOH FHSIS Reporting  
To generate your FHSIS Report by setting the date range you want and clicking on the Generate button.

**Monthly Reports**

- Program Report M1
- Morbidity Report M2

**Quarterly Reports**

- Program Report Q1
- Morbidity Report Q2

**Annual Reports**

- A-Brgy
- A1

**» PhilHealth Reports**

PhilHealth PCB1 Report  
To generate your PHIC PCB1 Report by setting the period and clicking on the Generate button.

**Primary Care Benefit 1 (Soon!)**

- Annex 1
- Annex 2
- Annex 3
- Annex 4
- Annex 5

**Generating FHSIS reports**

**PHIE Lite**



Chat... ▾



With the growing **dynamism** of the public and private healthcare ecosystems, as well as having attained maturity in its use as an EMR, SHINE OS+ Version 2.0 Code Igniter is now updating its features on its Version 3.0 Laravel Version launch.



# NEW TYPES OF USERS

## PUBLIC HEALTH

MHO  
RHUs  
MIDWIFE  
Barangay Health  
Workers

## PRIVATE CLINICS / PRIVATE PRACTICE / MEDICAL SERVICES

## MEDICAL ASSOCIATIONS / SPECIALIZATIONS

## HOSPITALS



# NEW TYPES OF DEVELOPERS

PROFESSIONAL  
DEVELOPERS

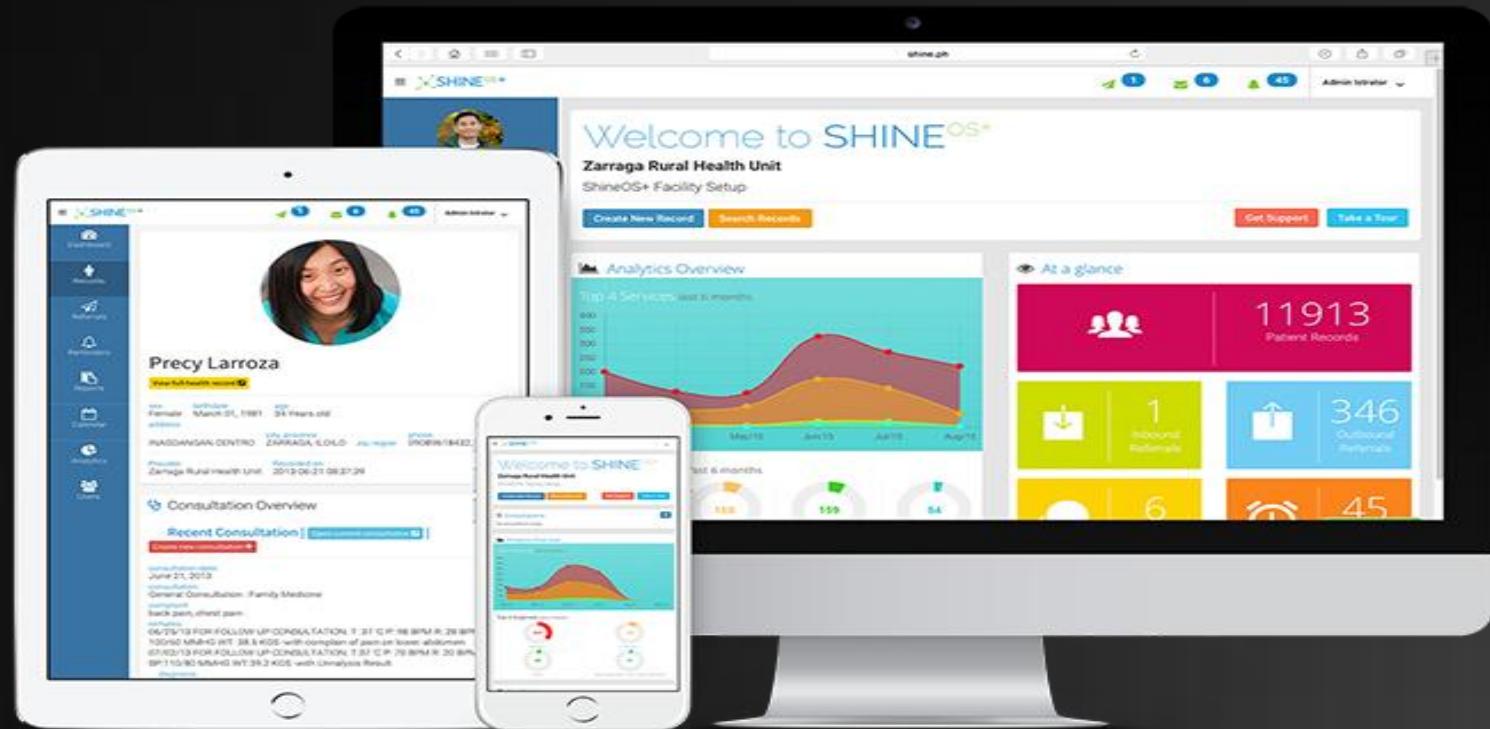
STUDENT DEVELOPERS /  
SHINE LABORATORY

USER INTERFACE  
&  
USER EXPERIENCE

SUBJECT MATTER EXPERTS



# NEW TYPES OF PLATFORMS



**SMART**

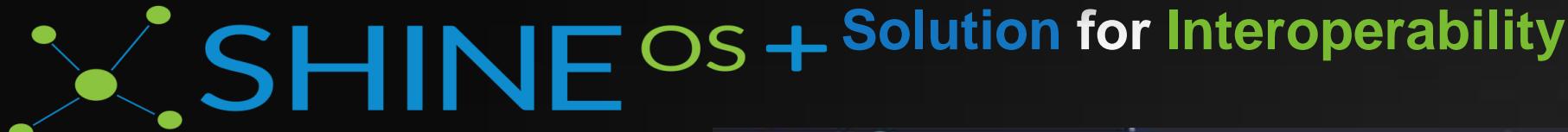
AJWCC  
Ateneo Java™ Wireless  
Competency Center

ATENEO DE MANILA  
UNIVERSITY

SHINE OS+

# Not just an EMR





# SHINE OS + Solution for Interoperability

```
return {
  postNewConsultation: function(data){
    console.log("[ NEW HEALTHCARE DATA ]", JSON.stringify(data[0]));
    $ionicLoading.show({ template: '<ion-spinner icon="crescent"></ion-spinner>' });
    var deferred = $q.defer();
    var promise = deferred.promise;
    $http({method: 'POST', url: shineAPIURL + "/api/healthcareservices/insertHealthcareData",
      headers:{ "shineKey": shineKey, "shineSecret": shineSecret },
      data:{
        "facility_id": data[0].facility_id,
        "user_id": data[0].user_id,
        "patient_id": data[0].patient_id,
        "healthcareservicetype_id": data[0].healthcareservicetype_id,
        "consultation_type": data[0].consultation_type,
        "encounter_type": data[0].encounter_type,
        "encounter_datetime": data[0].encounter_datetime,
        "seen_by": data[0].seen_by,
        "complaint": data[0].complaint,
        "diagnosis_notes": data[0].diagnosis_notes,
        "diagnosislist_id": data[0].diagnosislist_id,
        "disposition": data[0].disposition,
        "discharge_condition": data[0].discharge_condition,
        "discharge_notes": data[0].discharge_notes,
        "discharge_datetime": data[0].discharge_datetime,
        "bloodpressure_systolic": data[0].bloodpressure_systolic,
        "bloodpressure_diastolic": data[0].bloodpressure_diastolic,
        "temperature": data[0].temperature
      }
    }).success(function(responseData) {
      console.log("Success", JSON.stringify(responseData));
      $ionicLoading.show({ template: 'Successfully Sent!', duration: 1000});
    }).error(function(responseData) {
      console.error("Err", JSON.stringify(responseData));
      deferred.reject('Error');
      $ionicLoading.hide();
    });
    promise.success = function(fn) {
      promise.then(fn);
      return promise;
    };
    promise.error = function(fn) {
      promise.then(null, fn);
    };
  }
};
```



## Solution for Continuity of Care

At a glance

1	Patient Record/s
2	Inbound Referrals
2	Outbound Referrals
2	Referral Messages

Referrals

Home > Referrals

Status	Referrer	Health Care Service	Patient Name	Date Referred
Pending	SHINE Test Facility	GeneralConsultation	John Val Jean	2016-04-04 16:33:30
Pending	First Private Facility	GeneralConsultation	Sky red is blue	2016-04-04 15:40:03

Folders

- Inbound
- Outbound
- Drafts

Referral Messages

- Inbox

# Solution for Sustainability

Rx

**Zarraga Rural Health Unit**

ShineOS+/PHIE ePrescription

Name: Rolando Casipe  
Address: INAGDANGAN CENTRO  
Contact: 0948-5334362      PhilHealth#: PhilHealth#:

Sex: M      Birth: November 17, 1996

September 15, 2015

**Cefuroxime 500 mg TABLET #14 Tablets**  
2 x a day - Every 12 hours  
From: June 11, 2015  
To : June 17, 2015

MD: Admin Istrator  
Lic#: 23245532111 | PHIC Accr#: 986765765123  
Tel: 632-123-4567 | Email: admin@shine.ph

Powered by **SHINE OS+** **3AG SYSTEMS**

Medical Management & Order      Give Medical Prescription

**Prescription Order**

Generic Name: Amoxicillin, HTIG and Tetanus toxoid  
Brand Name: Brand name

Dose Quantity: 28      mg: Choose  
Total Quantity: 1      Choose

Dosage Regimen: Choose  
Duration of Intake: Frequency: Choose

Regimen Start Date: 09/21/2011  
Regimen End Date: 09/28/2011

Prescription Remarks: HTIG to be injected on the right arm  
Tetanus toxoid at  
or dressing of wound

Add Medical Order      Print Prescription



# RN Solution for Innovation

**Facility Health Analytics**  
Statistics shown below are data coming from your registered facility only. These do not represent any other aggregated data.

**Patient Demography (Sex)**

Sex	Count
Male	75
Female	20

**Services Provided**

Service	Count
FAMILYPLANNING	2
GENERAL	11
PRENATAL	54
TB	1

**Create Appointment**
**Create Referral**

**Medical Orders**
**Disposition**

**Consultation Type**
New Admission
 New Consultation
Follow-up

**Medical Category**
Family Medicine

**Smart**
AJWCC
SHINE OS+

**Ateneo Java Wireless Competency Center**
ATENEO DE MANILA UNIVERSITY

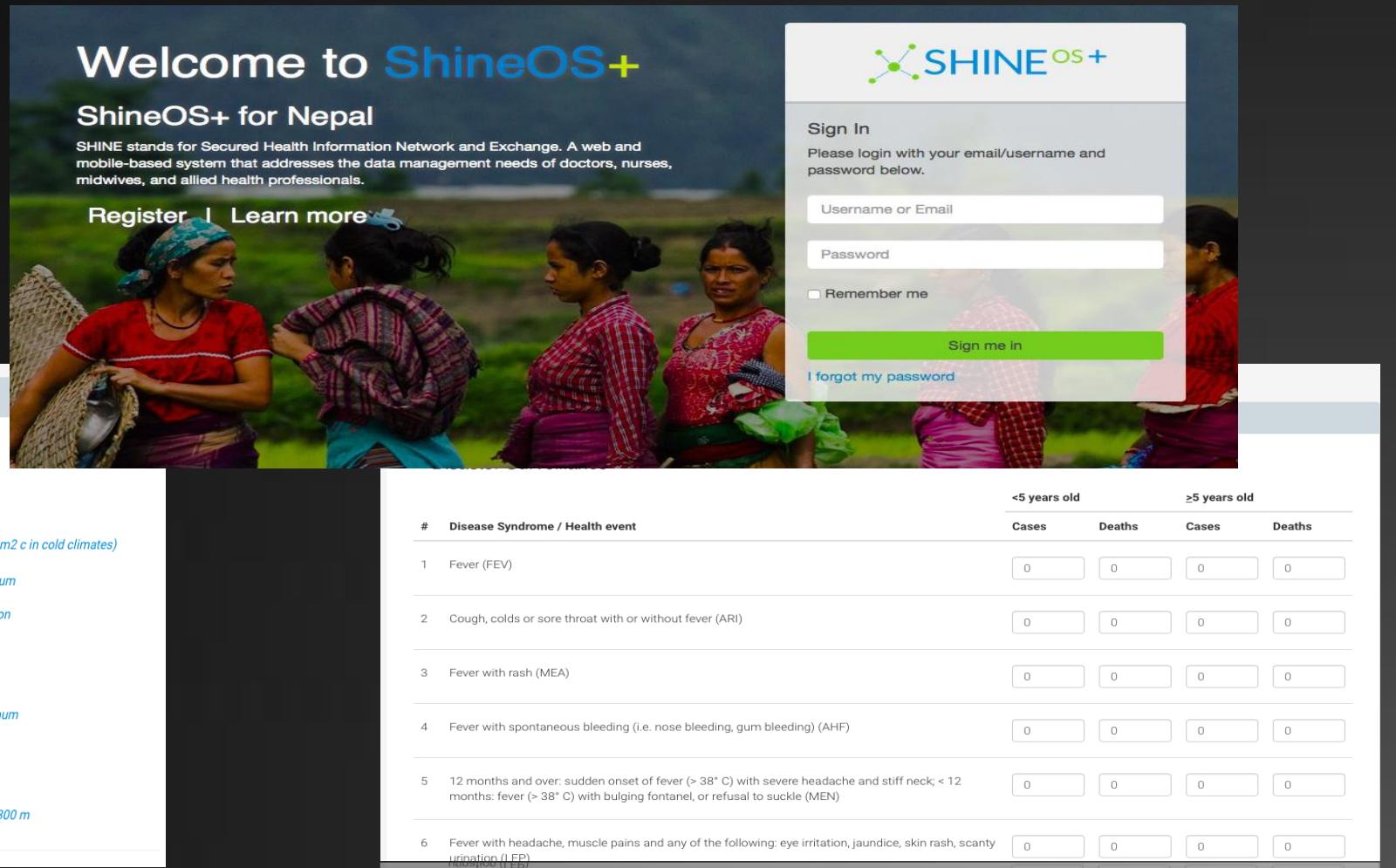
**Nurses Notes**
**Date: Time**

<b>(3pm-11pm shift)</b> Sept. 22, 2015 3:42 pm	<b>Nurses Notes</b>  > Received patient lying on bed with 50cc of plain NSS at 15 drops per minute attached at right arm (gtts/min)  <i>- the nurse will provide a physical description of the patient upon doing her first round or after endorsement (this will include what are the equipment attached to the patient)</i> > afebrile, no labor breathing noted, temperature – 37.5 C
4:00pm	  > Paracetamol 500mg tablet given > temperature – 37 C > sponge bath given
10:42pm	  <i>- the nurse will write down care that he/she has given</i>  > Urine output – 300cc / clear > 1x with stool passage during the entire shift > fluid intake – 1000cc <i>-nurse will write down patient's condition prior to end of his/her shift</i>
<b>Nurses Full Name with signature</b>	

# Solution for Disaster Response RESPONSE / REHABILITATION

# SHINE NEPAL

Facility Information	Living Environments	Disaster Surveillance	EWARS
<b>Living Environments</b>			
<i>Area per person for collective activities</i>	<input type="text"/>	<i>m2 a</i>	
<i>Shelter space per person</i>	<input type="text"/>	<i>m2 b</i>	(4.5–5.5 m <sup>2</sup> c in cold climates)
<i>Distance between shelters</i>	<input type="text"/>	<i>m minimum</i>	
<i>Area for support services</i>	<input type="text"/>	<i>m2/person</i>	
<i>Number of people per water point</i>	<input type="text"/>		
<i>Number of people per latrine</i>	<input type="text"/>		
<i>Distance to water point</i>	<input type="text"/>	<i>m maximum</i>	
<i>Distance to latrine</i>	<input type="text"/>	<i>m</i>	
<i>Distance between water point and latrine</i>	<input type="text"/>	<i>m</i>	
<i>Firebreaks</i>	<input type="text"/>	<i>m every 300 m</i>	



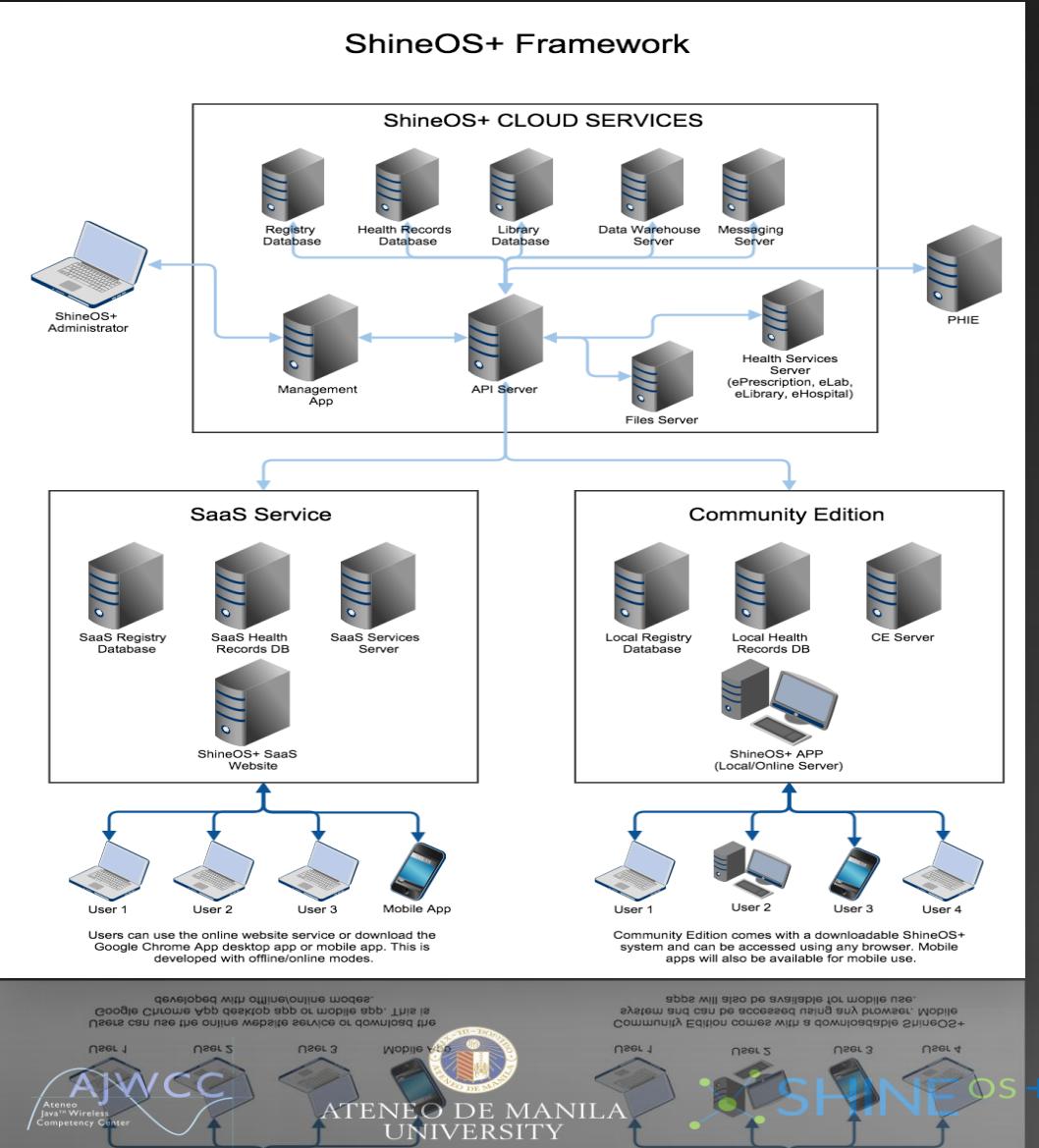
# ATENEO DE MANILA UNIVERSITY

# Solution for Open Thinking REUSE

• /ROMEL PLEASE INSERT SAMPLE CODE

```

shineosplusv2
  PatientsController.php
    Alt + F to start searching
    composer.lock
    config
    contributors.txt
    database
    gulpfile.js
    modules
      Analytics
      Calendar
      Consultations
      Dashboard
      Facilities
      HealthcareServices
      Patients
        Assets
          composer.json
        Config
        Console
        Database
        Entities
        Http
          Controllers
            .gitkeep
            PatientsController.php
          Middleware
          Requests
          routes.php
        Models
        module.json
        Providers
        Repositories
        Resources
        start.php
    Line 1, Column 1 — 137 Lines
  
```



We WANT YOU to

- ✓ Do more

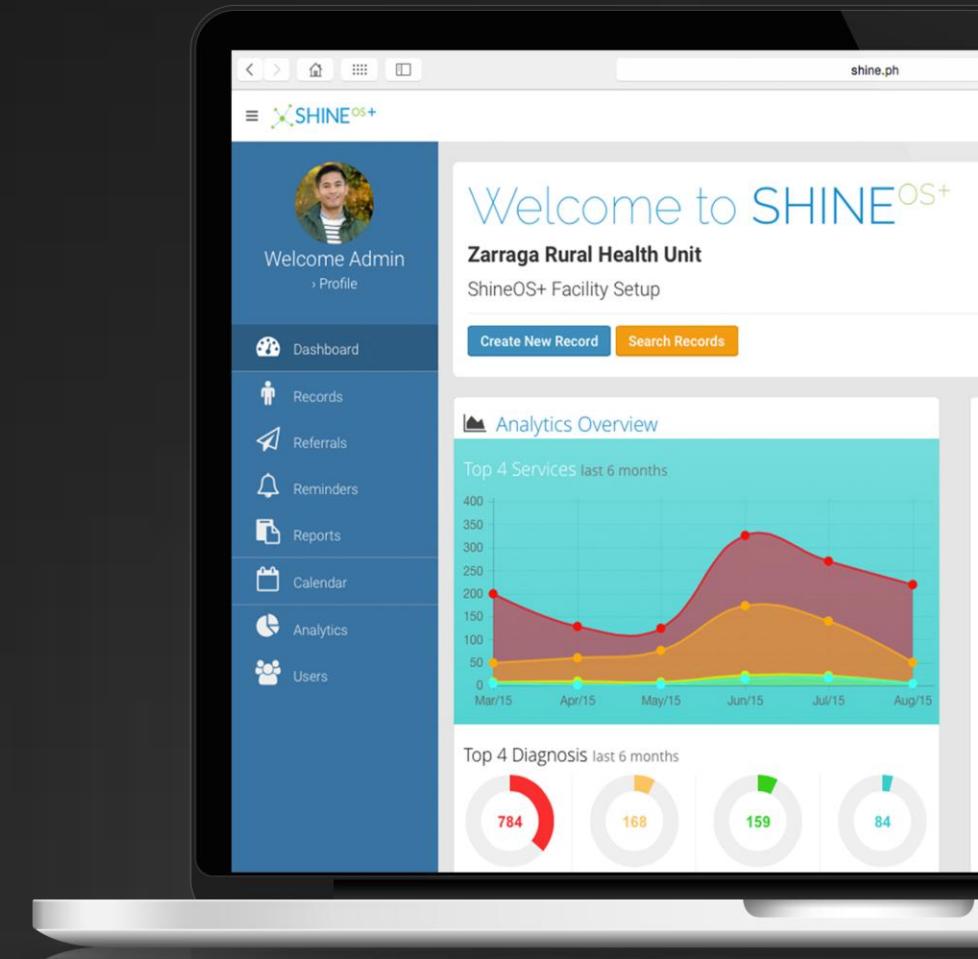
So that SHINE OS+ can

- ✓ Be more

So WE ALL can

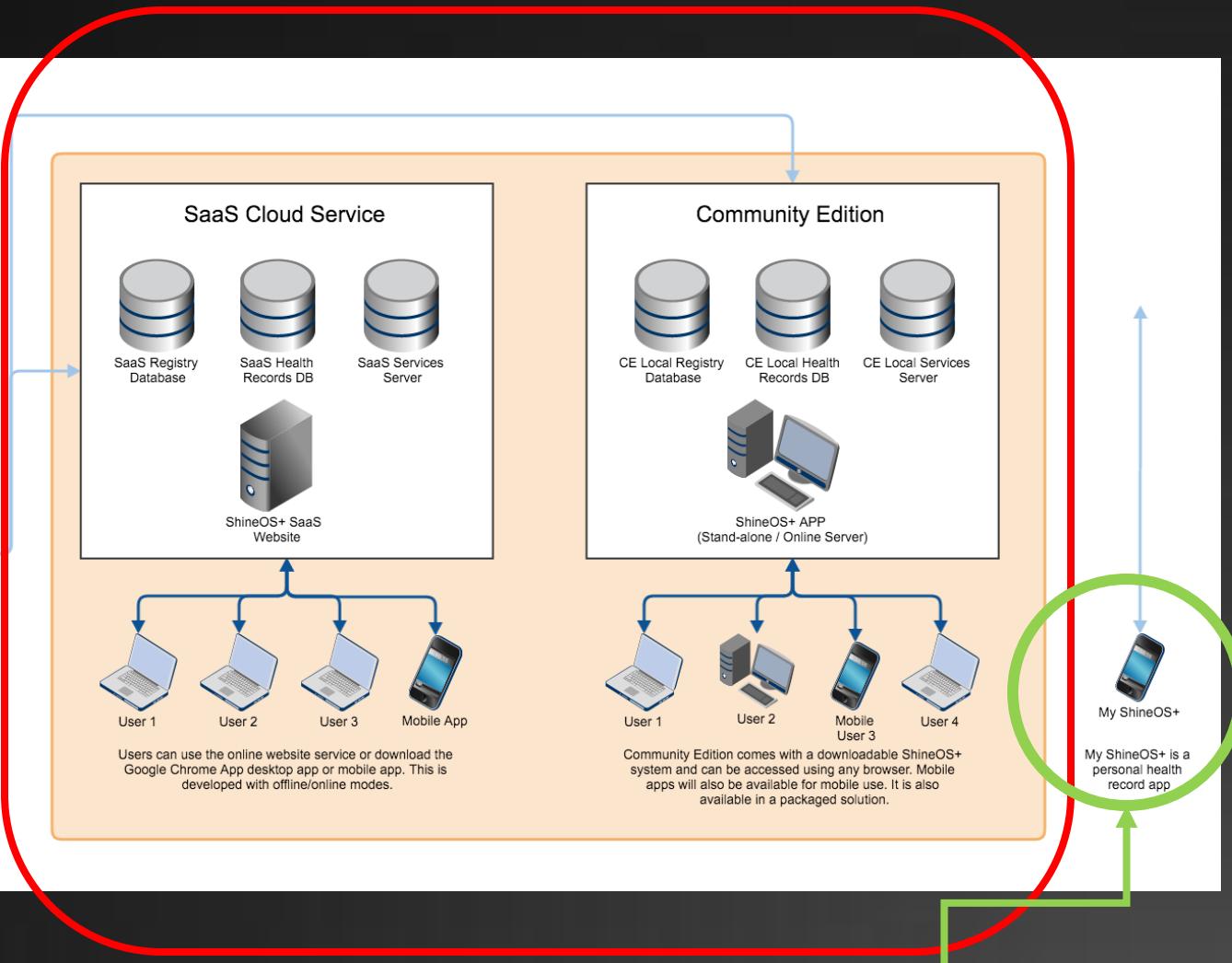
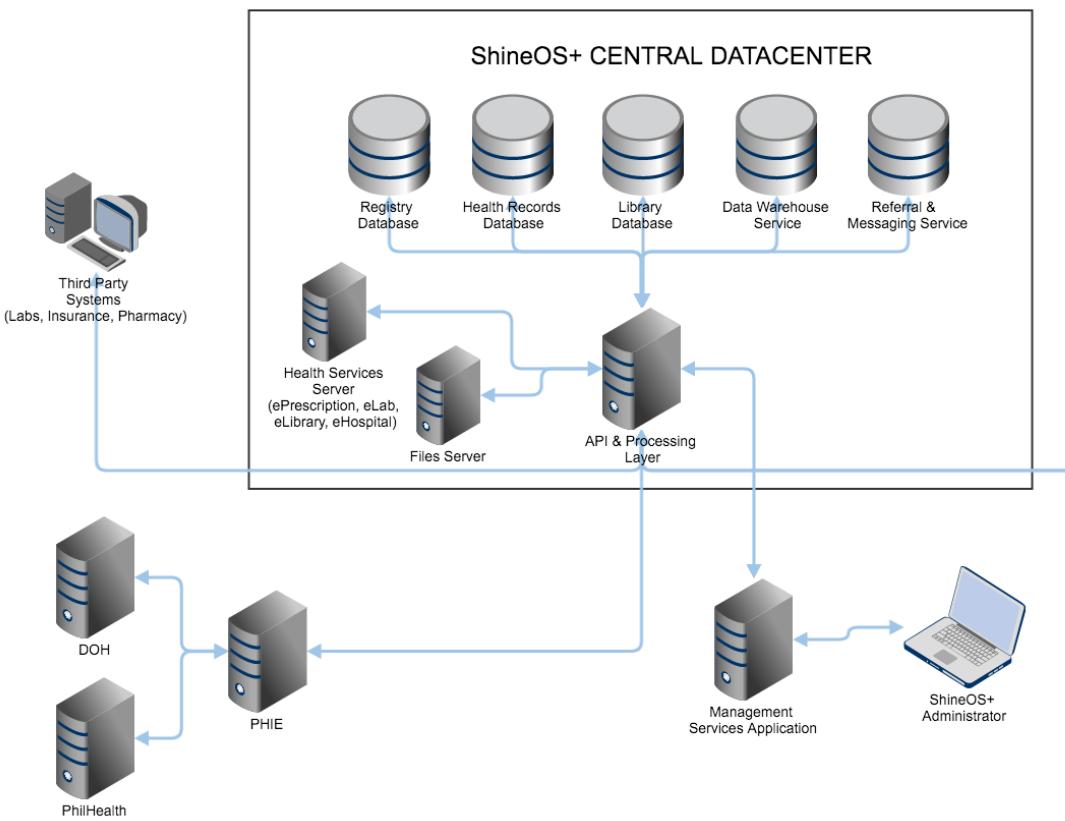
- ✓ SERVE MORE

# ShineOS+



# ShineOS + Architecture





# ShineOS + Architecture

COMING SOON!

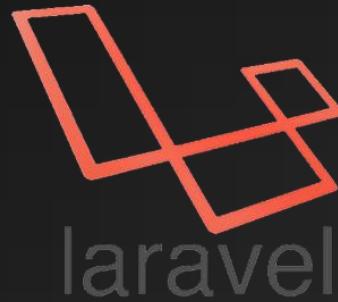


Application Technology



Web Technology

Application Framework



Mobile Framework



UI Framework



Bootstrap



# OpenSource Technologies

## Development Support Service Technologies

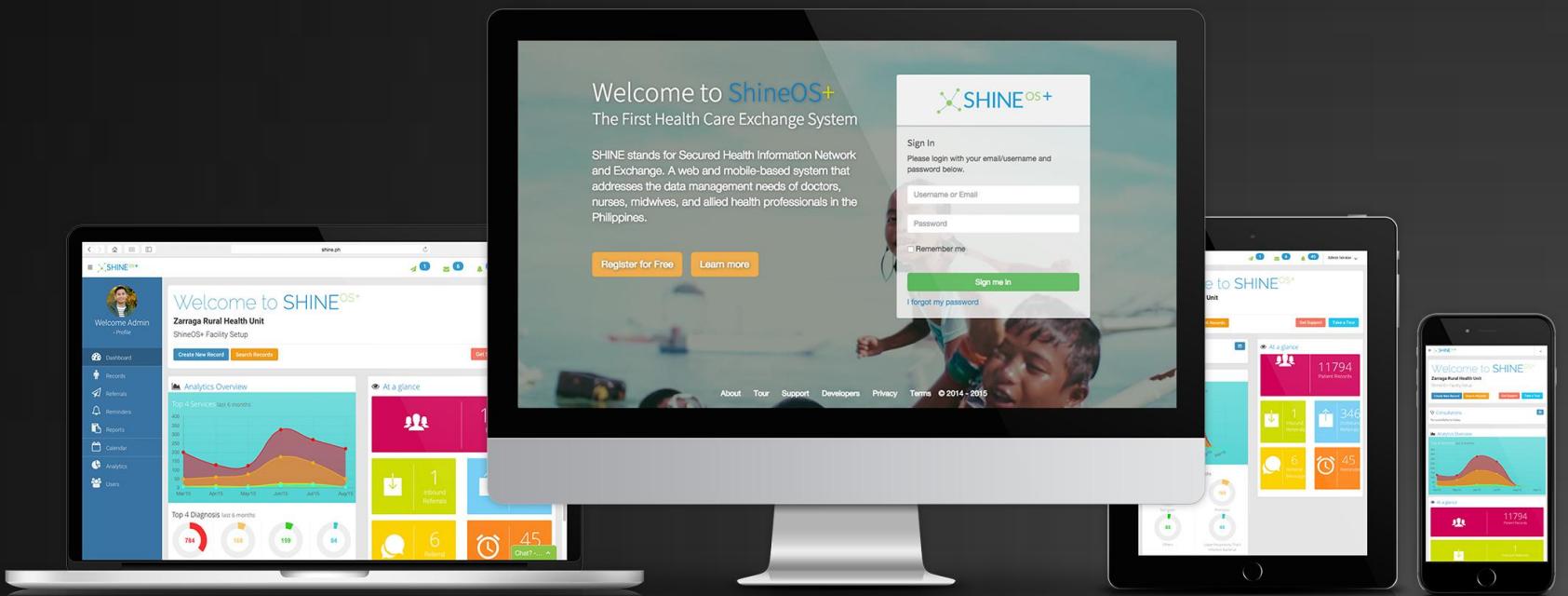


MOBILE PROGRAMMING AND SOLUTIONS

**smart  
developer**

# OpenServices

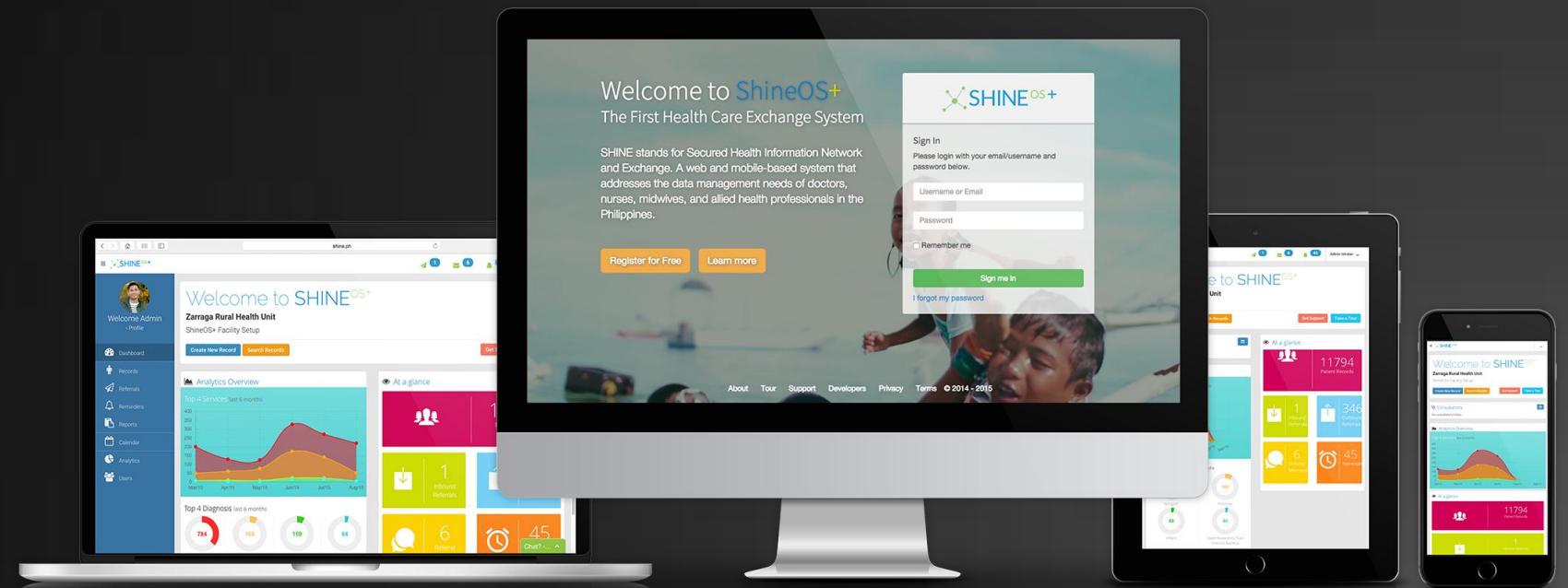
# Editions



# ShineOS+ V3.0 (2016 release)

- Cloud (SaaS)
- Community Edition
- Mobile Edition
- Developer Edition

# Editions



# EDITION COMPARISON

	Cloud	CE	Mobile	Developer
■ Online	?		?	
■ Database	Multi-tenant	Single w/ Cloud Sync	Multi-tenant	Single
■ Sync-to-cloud		?	?	
■ Record	?	?	?	?
■ Refer	?		?	
■ Remind	?		?	
■ Report	?	?	?	?
■ Customizable	?	?		?
■ Multi-user	?	LAN only		
■ SSL	?		?	

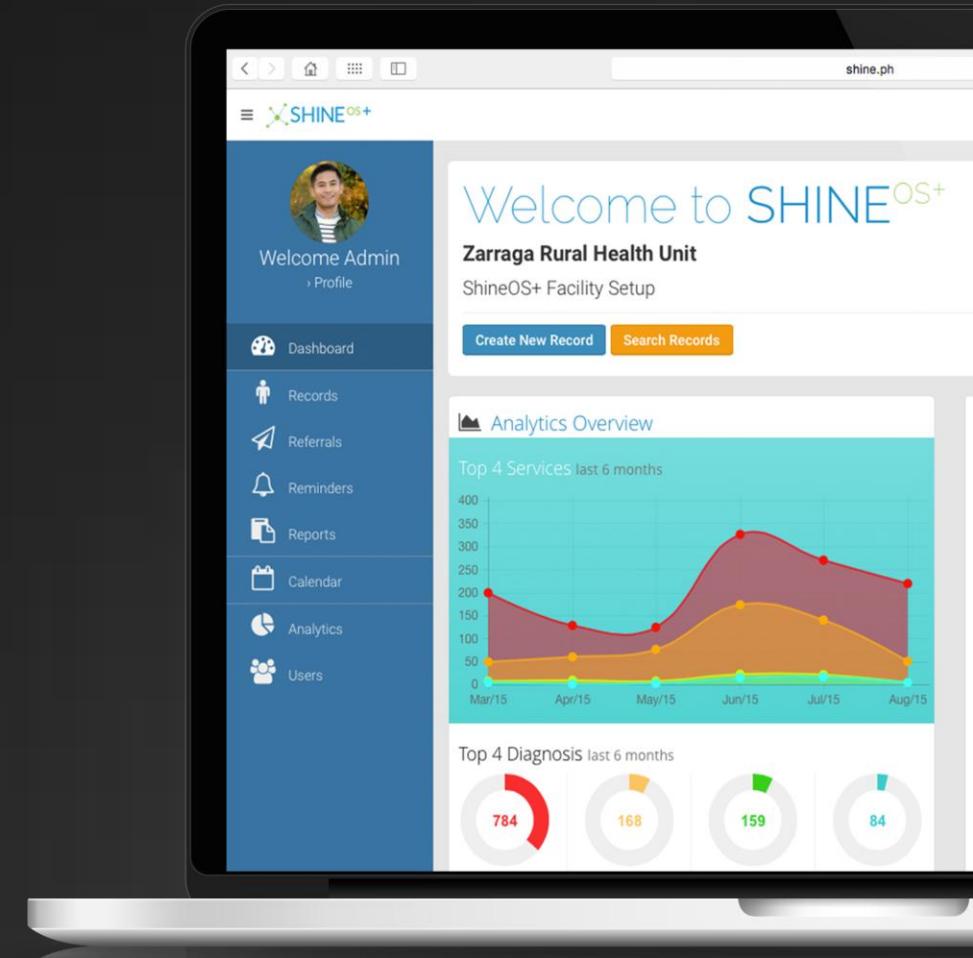
# Developer Edition

## ShineOS+ Development Toolkit



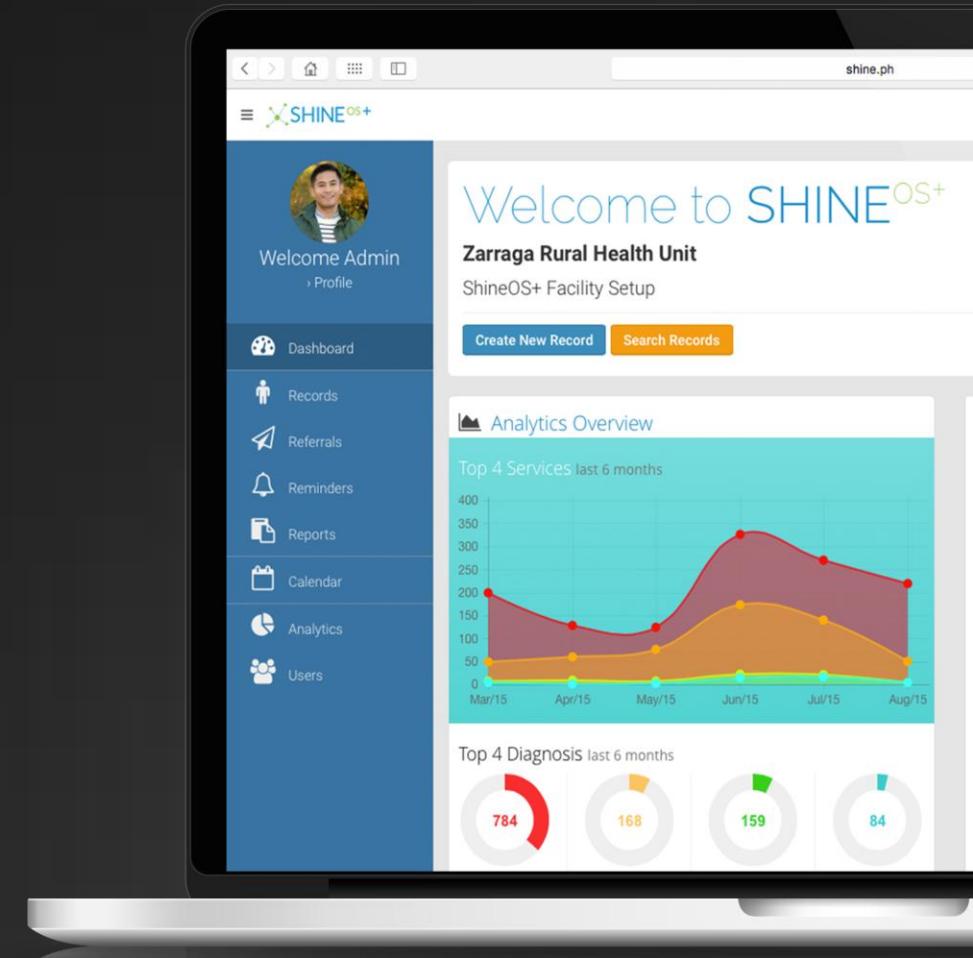
# Development Requirements

- Apache 2
- PHP 5.6
- MySQL 5.5
- HTML 5
- CSS3
- Javascript
- XAMPP for CE



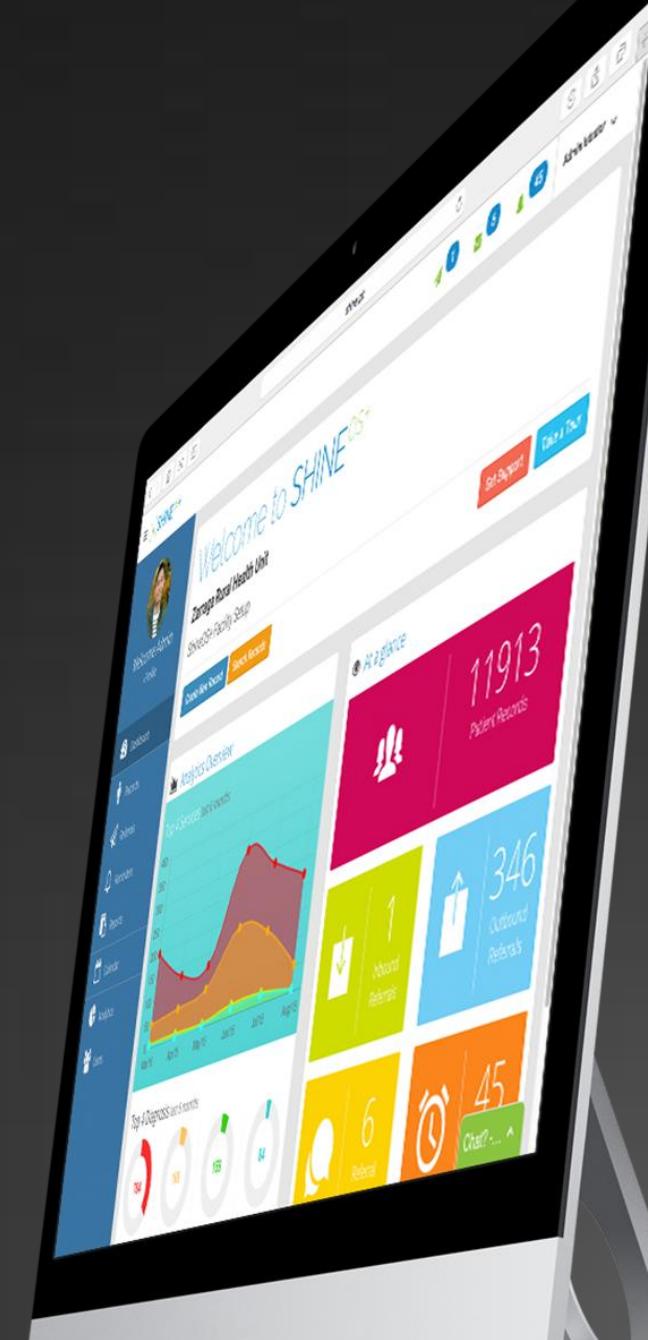
# Development Requirements

- Laravel 5.1
  - Packages
- Jquery 3+
  - Jquery Plugins
- Bootstrap 3.0
  - Bootstrap Extensions



# SHINEOS + DATABASE ARCHITECTURE

- Multi-tenant
- Relational DB
  - EAV (Entity-Attribute-Value) Model



# SHINEOS + DATABASE ARCHITECTURE

- Multi-tenant

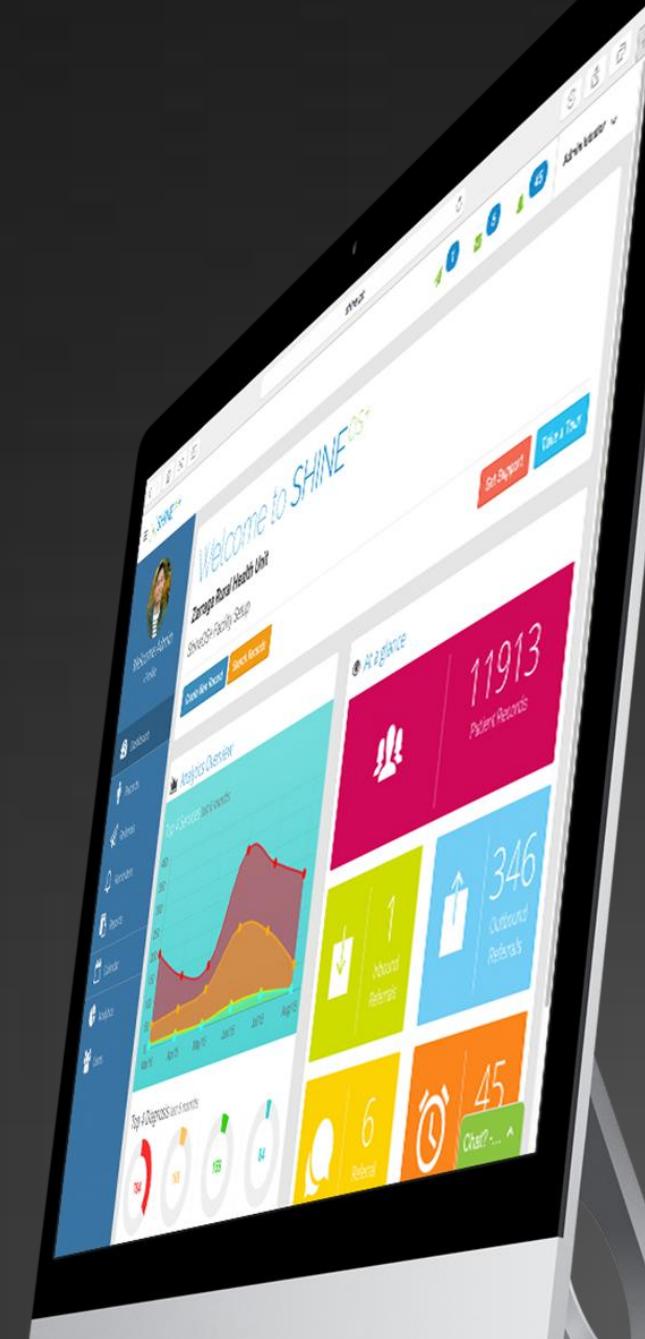
Many Facilities

> Many Users

> Many Patients

> Many Health Records

\*FacilityUserPatient\_ID



# SHINEOS + DATABASE ARCHITECTURE

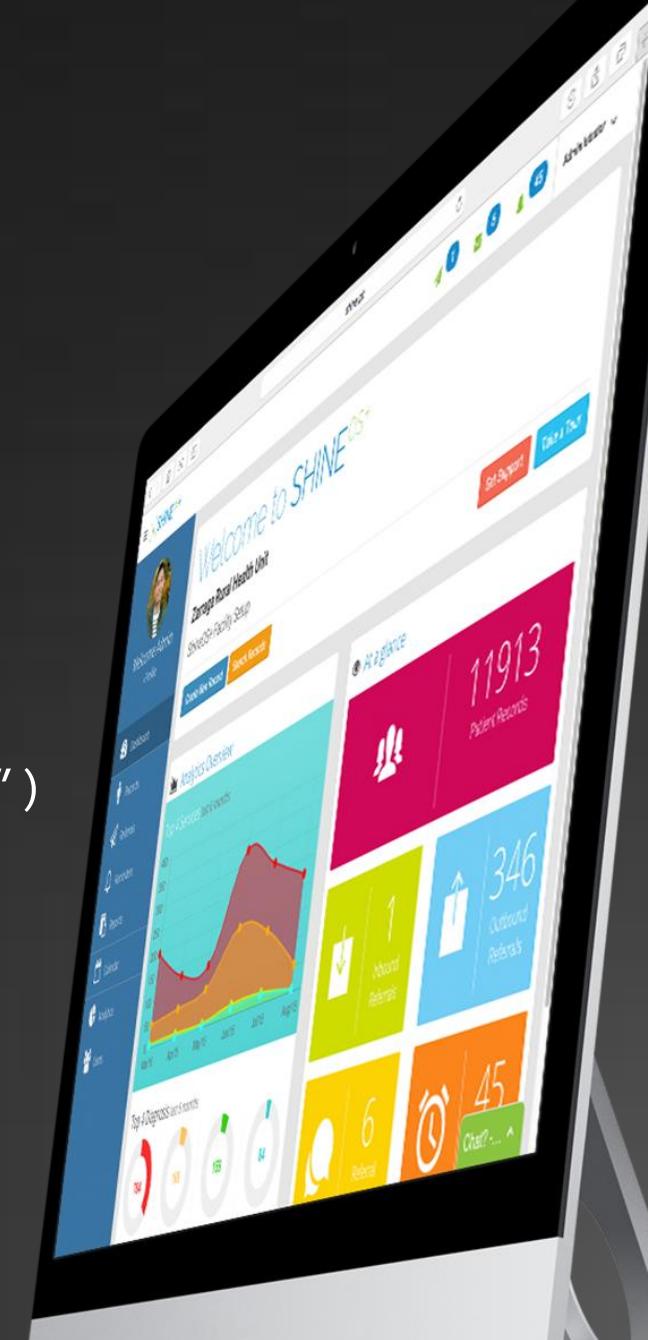
- EAV (Entity-Attribute-Value) Model

The *entity*: the item being described.

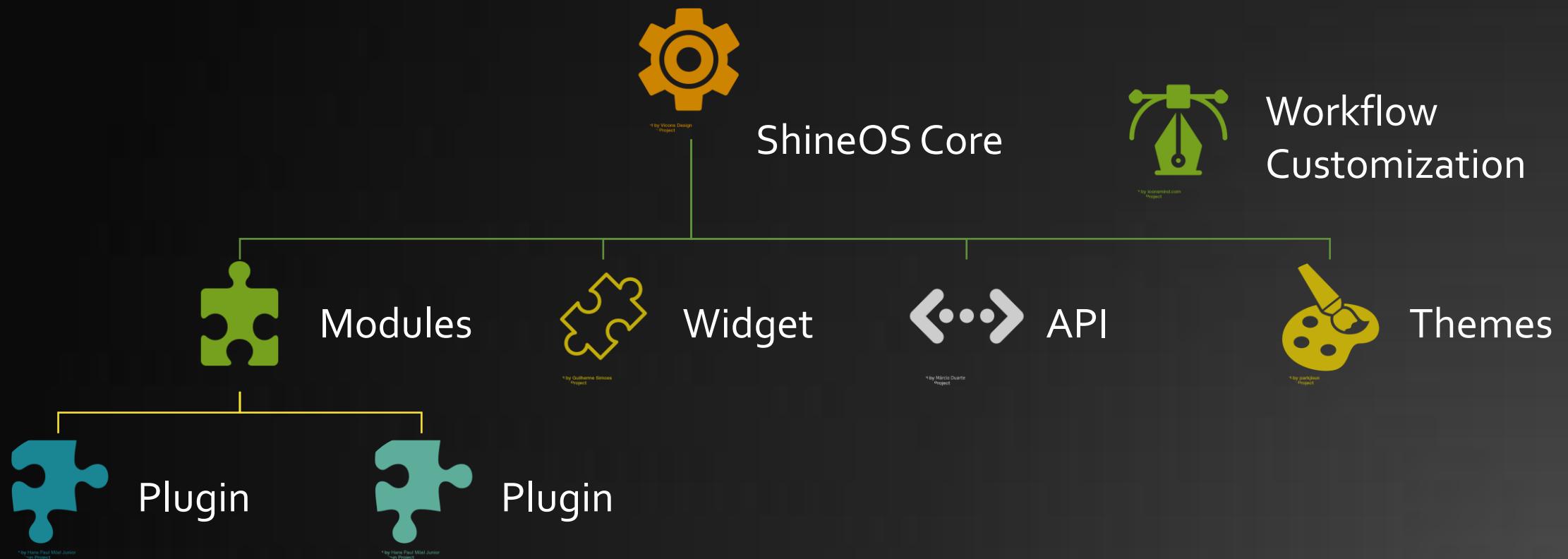
The *attribute* or *parameter*: a column definition.

The *value* of the attribute.

(<patient XYZ, 1/5/98 9:30 AM>, <Temperature in degrees Fahrenheit>, "102")

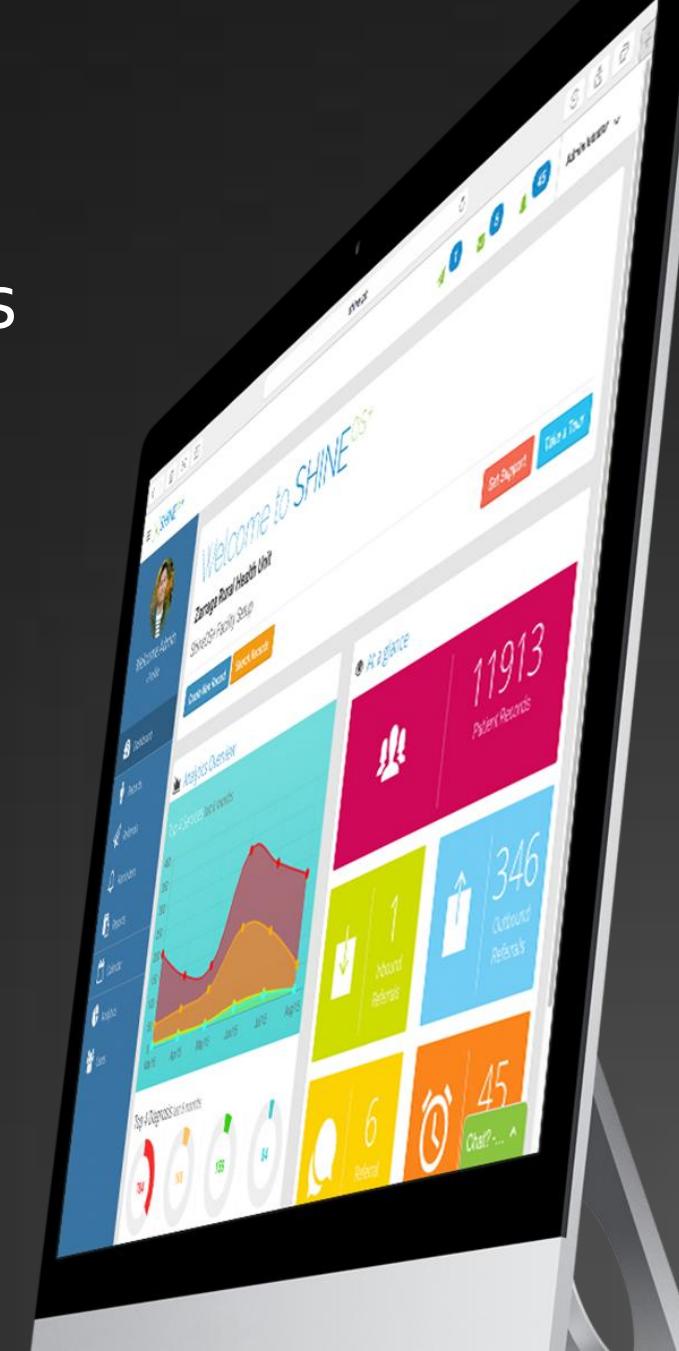


# SHINEOS+ EXTENSION ARCHITECTURE



# SHINEOS+ CORE Modules/Plugins

- Facility
- User
- Patient
  - Allergies / Alerts
  - Health History
  - Employment Data
  - Family Data
  - PhilHealth
- API
- Extensions
- Healthcare Services
  - General Consultation
  - Maternal
  - Pediatric
  - TB
  - Dengue
  - Typhoid
- Referral
- Reminder
- Reports



# SHINEOS+ SAMPLES

Modules	Plugins	Widgets
<b>Medical</b> <ul style="list-style-type: none"><li>• Laboratory</li><li>• Prescription</li><li>• HMO/Insurance</li><li>• Medical Imaging</li><li>• EMR</li></ul>	<ul style="list-style-type: none"><li>• Hi-Precision Connect</li><li>• Mecury Drug Delivery</li><li>• PhilHealth Membership</li><li>• Xray uploading</li></ul>	<ul style="list-style-type: none"><li>• Breakout Alerts</li></ul>
<b>Financial</b> <ul style="list-style-type: none"><li>• Billing</li><li>• Inventory</li></ul>	<ul style="list-style-type: none"><li>• Monthly Reporting</li><li>• Credit Card Payment</li></ul>	
<b>Emergency</b> <ul style="list-style-type: none"><li>• Emergency Response</li></ul>	<ul style="list-style-type: none"><li>• SMS notification</li></ul>	
<b>Social Media</b> <ul style="list-style-type: none"><li>• Remote Consultation</li><li>• Knowledge Base</li></ul>		
<b>Advertising</b> <ul style="list-style-type: none"><li>• Pharmacy</li></ul>		

# SHINEOS+ SAMPLES

Modules	Plugins	Widgets
• Municipal Systems	• Census • Barangay Profiling • Population Monitoring	
• Statistical / Analytics		
• Calendar		
• Mapping		

# ShineOS+ Developer Docs & Codex

Documentation for developers

# Basic Module Structure

- **ModuleName** Folder
  - Assets
    - js
    - css
  - Config
    - config.php
  - Database
    - Migrations
      - YYYY\_MM\_DD\_HHMMSS\_some\_meaningful\_name.php
  - Entities
    - ModuleName.php
- Http
  - Controllers
    - ModuleNameController.php
  - routes.php
- Providers
  - ModuleNameServiceProvider.php
- Resources
  - views
    - Layouts
      - master.blade.php
      - index.blade.php
- composer.json
- module.json
- start.php

# Basic Plugin Structure

- PluginName Folder
  - PluginName config.php
  - PluginName.blade.php
  - PluginName Model.php
  - PluginName Controller.php
  - master.blade.php
  - icon.png
  - brand.png

# ShineOS+ Developer Docs

Development Guidelines

<http://www.shine.ph/developer/docs/development-guidelines/>

Extensions Development

<http://www.shine.ph/developer/docs/introduction/>

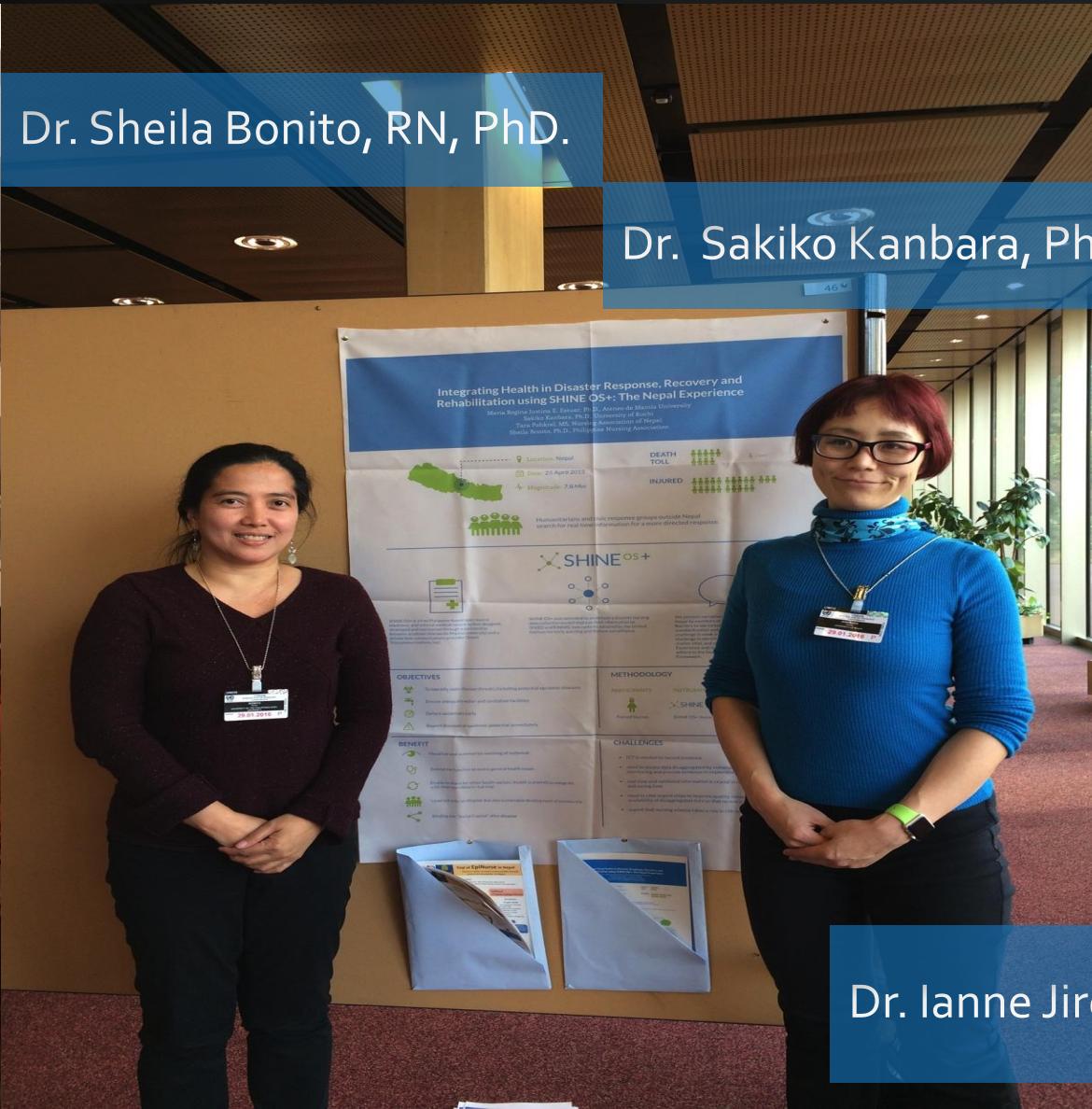
Codex

<http://www.shine.ph/developer/codex>

Development Manual

<http://www.shine.ph/developer/docs/module-basics/>

# THE SHINE OS+ AMBASSADORS



[www.shine.ph](http://www.shine.ph)  
inquiry@shine.ph

# Ateneo ShineLabs

Ateneo de Manila University

