

OpenMRS Flow

UI: Component Summary

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Major Application Parts

OpenMRS Flow contains two major parts: Home and a Patient File.

Part 1: Home	Part 2: Patient File	
	Patient Workflows	Patient Chart
Find and launch the right patient In future will also have other functionality, such as reporting, messaging, etc	Easy to build and customize workflows (see information, enter information, etc) designed for different clinical situations. Includes: orders, messaging,	The summary of all the patient's medical information in a standardized format

Part 1: Home

Login

Login Screen: User logs into application for first time that day

Splash Screen: Screen that displays as application logs in

Lock Screen: Screen displayed when user leaves the application briefly during the day

Home Page

Home Page

- the first screen the user sees on log-in. Customized based on the user role and clinic. May include: search, lists, action buttons, and other pages

Search

- search for a patient by name, number; or other key searches (eg. lab req)

Lists

- **Patient List** for a healthcare worker following up on missed patients
- **Clinic Queue** targeted to the user type and clinic
- **Unit** - such as an inpatient ward, emergency room, or operating room
- **To-Do** - a list of items to follow up on
- **'Inbox'** - aggregation of to-do-lists and results

Patient Summary Card

- a patient search or lists result is displayed via a '*patient summary card*'. It displays patient demographics, additional information, and key actions, relative to the list it is being displayed in. The card adapts across mobile, table, and desktop.
- A card can have a summary view and an 'expanded view'

Action Buttons

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Other Page

- as custom built, or new features in the future (such as reporting, messages)

Miscellaneous

Additional functionality. Kept within the left hamburger menu accessible when in the Application.

User Settings: change user and clinic location,

App Settings: change app features, such as server being used
User Feedback: easy to capture anonymous, or named, feedback
Help & Training: contacts for Help Desk, and self directed materials
System Notifications: application version number, connection speed, system functionality,

Link: between Home & Patient File

A list contains patient summary cards.

The list or the patient summary card action buttons, can be configured to open the Patient File to either (a) the Workflow Selection, (b) a specific Workflow, or (c) the Patient Chart.

For instance, the *HIV Outreach Worker - Missed Appointment List*, will open the patient file directly to the *Missed Appointment Workflow* for patients.

Note: There is a clear division between being inside the patient file and the general application.

- Only one patient file can be open at a time.
 - This is a safety feature, to ensure the components being used on a patient's file are reading / writing information on the correct patient.
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Part 2: Patient File

The user can change at anytime between the Patient Workflow & Patient Chart. On tablets and desktop these displays can be arranged side-by-side.

Patient Workflows	Patient Chart
Customize workflows designed for different clinical situations and users. Makes it easy to review and capture information and actions.	The summary of all the patient's medical information in a standardized format

Patient Workflows

Workflow Selection

Today's Workflow: The workflows the system anticipates a user should complete are displayed on this screen. The user can select the workflows to confirm they are to be completed that day.

Add Other Workflows: If a workflow the user would like to complete is not shown, they can pull up a list of all other workflows to select from.

Workflows

More than a form: A workflow is different than a form, in that it includes components that in addition to being able to capture information, can also display information and actions.

Components: A workflow is built using Components. The Component Library is in Part 3.

Pre-Built Components: an extensive library of pre-built components has been built to cover most clinical scenarios.

Generic Components: If a pre-built component is not available, generic components can be customized to the required need.

Add-new components: implementations can re-build, and add new components to the component library. Standards helps ensure that similar component types are backwards compatible and swappable.

Workflow logic

- Skip Logic:

Data Auto-Population: fields can be set to auto-populate with previous answers.

Workflow Example

HIV Outreach Worker - Missed Appointment Workflow

The HIV Outreach worker logs into the application, selects the 'Missed Appointment List' (that auto-populates based on Clinic Location and Clinic Type) and selects a patient summary card.

The Patient's File opens, directly to the requested Missed Appointment Workflow.

The workflow includes multiple pre-configured components. In this example, the Workflow designer has assembled everything onto one single page with four sections assembled one-after-each other.

1. Missed Appointment Information
 - a. **Patient Name, Age,**
 - b. [HIV] **Program Summary Card** (Detailed)
 - c. [ALL] **Encounter History Panel** (Detailed)
 - d. **Date of missed encounter**
2. Contact Patient
 - a. Workflow Section: **"Phone-Follow Up"**
 - b. Call Patient
 - i. Patient Demographics / **Phone Number**
 - ii. Patient Demographics / **Relatives / Phone numbers**
3. Document Phone Follow-Up
 - a. Structured / Number / **"Number of call attempts"**
 - b. Structured / Drop Down / **"Who does the phone belong to?"**
 - c. Structured / Radial / **"Was the patient contacted?"**
 - d. Unstructured / Free Text (long) / **"Clinical Notes"**
4. Next Steps
 - a. Action / **Book Follow up Appointment**
 - b. Action / **Referral for in-field follow-up**
 - c. Action / **Call back tomorrow**

Patient Chart

Patient Chart: **Patient Chart Header**

Patient Demographics: Contains critical identifying patient information

Patient Chart: **Chart Search**

A text entry bar that is used primarily for search within a patient's chart.

In the future the same bar can also be used to place orders using a text markup language.

Patient Chart: Major Tabs & their components

A series of 7 tabs are displayed across the top of the patient chart to provide easy access to critical areas. The same navigation is used across mobile, tablet, and desktop.

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Each tab contains a summary of the components listed under it. Selecting that component opens that component in further details.

1. Patient Info

- Demographics
- Patient Preferences
- Billing & Insurance
- Social History
- Family History
- Patient Care History

2. Summary

- Custom Summary Panel(s) based on User Role & Disease/Program
- Issues list
- Medical & Surgical History

3. Timeline

- Visit History
- Order History

4. Therapies

- Allergies
- Medications
- Immunizations
- Blood Products
- Medical Equipment
- Adverse Events

5. Notes [unsure about names]

- Sort by date, author, facility, issue type
- Displays lists of encounters & workflow documentation
- Physiology: Vitals | Growth Measurements | Physical Exam

6. Results

- Laboratory
- Diagnostic Imaging
- Diagnostic Test

7. Other

-

Workflow Component Library

These components can be assembled to create Patient Workflows.

Structural Components

Workflow Hierarchy: within a workflow users can create pages, sections, and panels.

- Page
- Section
- → Panel

Page: Tabs across the top of a workflow can help divide the workflow into separate 'pages' that make it easier to find information

Section: major divisions within a page.

Panel: comprised of one or several components.

Templates: a page, section, or panel, can each be saved as a template.

- **Master Template:** a master template is used across multiple workflows. When the master template is changed, the workflows using it are updated.
- **Draft Template:** a template is imported to use as a foundation to build a new workflow. When this this template is modified, it is no longer linked to the master template.

Headings: A page, section, and panel each may have its own heading.

Divider: can be placed to visually separates panels or sections

Text: displays text on screen

Image: displays image on screen

Split Screen: When viewed on a wider devices such as tablet or desktop, components that show information within a section appear on the 'left' side of screen, and components within that section for information entry and actions are displayed on the right. This provides a split screen view that makes it easier to review historical information while assessing a patient.

Progress Indicator: shows completion of the workflow

Generic Data Capture

These Generic components can be connected to the Concept Dictionary as required to build new questions not part of the existing library.

Text

- **Short answer:** Free text | Number | Date/time picker
- **Long answer:**

Choice Fields

- **Multiple choice:** binary answer (yes / no) | select 1 or >1 answers | Select image
- **Dropdown**
- **Grid:** Scale / slider | Grid / Matrix
- **Order/rank list**

Upload

- Photo | Document

Special

- **Draw:** on image | on anatomy
- **Signature on screen**
- **Location:** GPS
- **Barcode & QR Code:**

Other Ideas

- Numeric ranking of list
- Connect bluetooth device
- Image or text A/B Test
- Net Promoter Score
- Legal disclaimer confirmation
- Payment

Generic Data Display Component

These generic data display components can display information in a patient's chart that is not accessible via the standard Component Library.

Components to use to display clinical information include

Single line - display concept result on single line
List
Two axis grid / table
Image

Document Upload Types
<p>A document upload contains</p> <ol style="list-style-type: none"> Image capture of the original document Discrete data capture fields for that document type. <p>This is helpful when entering retrospective data and information from paper files.</p>
<p>Identification</p> <ul style="list-style-type: none"> - Government ID - Birth Certificate - Driver's License - Passport
<p>Result</p> <ul style="list-style-type: none"> - Labwork report <ul style="list-style-type: none"> - Biochemistry - Hematology - Microbiology - Virology - Pathology - Other - Diagnostic Imaging report - Diagnostic Test
<p>Clinical Document</p> <ul style="list-style-type: none"> - Inpatient note - Outpatient note - Consult Letter
<p>Procedure</p> <ul style="list-style-type: none"> - Surgical Report

Image Upload Types

A image upload contains

- c. **Original Image**
- d. **Image annotation:** markup on top of the image to draw attention to areas
- e. **Discrete data fields:** to capture relevant information about image

Patient History

Demographics

- Patient full names, past names
- Patient date of birth
- Sex & Gender
- Patient address
- Contact Information
- Relationships
- Patient ID numbers, barcodes, QR codes
- Patient photo
- Advanced Directives

Patient Preferences

- Advanced Directives, do not resuscitate, Living wills
- Languages
- Religion
- Cultural Practices
- Dietary preferences
- Blood products

Billing & Insurance

- Insurance provider

Social History

- Language
- Smoking & Alcohol
- Occupation
- Education
- Abuse
- Community
- Race
- Ethnicity
- Religion

- Exposures
Family History -
Patient Care History <ul style="list-style-type: none"> - Care Provider History <ul style="list-style-type: none"> - Formal care providers - Family / informal care providers - Faculty care history

Clinical Summary
Past Clinical History: <ul style="list-style-type: none"> - Past Medical History - Past Surgical History
Active Issues List
Program Summary <ul style="list-style-type: none"> - Custom cards that can be customized based on <u>clinical program</u> and <u>use role</u> <ul style="list-style-type: none"> - Eg. based on the clinical programs: HIV program - Eg. based on user role: HIV nutritionist
Patient Care Plan / Workflow status <ul style="list-style-type: none"> - Show, and update, progression along a multi-step workflow

Therapies
Allergies
Adverse Events
Medications <ul style="list-style-type: none"> - Single medication display - Medication List - Order Medication - Medication Reconciliation - Administer medication

Immunizations
-
Blood Products
-
Medical Equipment
- Prosthetics
- Orthotics
- Implantable Devices

Documentation [need to play around with these categories]
Inpatient Note
Outpatient Note
Consultation
Surgical Note
Impression Statements
Plan

Physiology
Vitals
- Blood Pressure
- Heart Rate
- Pulse
- Oxygen Saturation
- Height
- Weight
- Connect Bluetooth Device for vitals
Derived Growth Measurements
- Pediatric growth Charts
- Pediatric Z Scores

<ul style="list-style-type: none"> - BMI - Body Mass Index - BSA - Body Surface Area
Physical Exam <ul style="list-style-type: none"> -

Orders [still need to play around with what categories make most sense here]
Medications - Outpatient <ul style="list-style-type: none"> - Medications - ePrescription
Medications <ul style="list-style-type: none"> - Intravenous
Investigation <ul style="list-style-type: none"> - Laboratory Test - Radiology Test - Diagnostic Test
Consultation & Referral <ul style="list-style-type: none"> - Counseling
Diet & Activity <ul style="list-style-type: none"> - Diet - Activity - Lifestyle - Wound Care
Blood Products
Procedures
Vision
Patient Status <ul style="list-style-type: none"> - Admission - Transfer
Biologics

Results

Laboratory

- Biochemistry
- Hematology
- Microbiology
- Virology
- Pathology
- Other

Diagnostic Imaging

- By modality

Diagnostic Tests

- EKG
- Pulmonary Function
- EEG

Clinical Decision Support

Global Patient File CDS

Workflow Specific CDS

Warnings

- Synchronous
- Asynchronous
- Alert overrides

Drug Rules

- Drug-drug interaction
- Drug-allergy interactions
- Patient specific dose warnings

Laboratory Rules

Patient Communication

SMS

Video / Audio

E-Mail

Letter

Patient Administration

Create New Patient

Disease patient

In-Clinic Tools

Appointment Schedules

- Book new appointment
- Change / cancel appointment(s)

In-Clinic Patient Movement

- Clinic sign in
- Patient Queue management
- Complete encounter with provider

Reports

Indicator management

Generate tabular report

Kibana integration

Print & export

Future Features
Facility Management
Supply Chain Management
Equipement Management
Human Resource Management
Health Financing
Patient Health Record
Patient Entered Data
Bulk Features <ul style="list-style-type: none"> - Eg. Bulk Scheduling
In-Hospital Patient Movement <ul style="list-style-type: none"> - Admission - Discharge - Transfer