O3 Appointment Management

Summary of the Problem

- Centres using OpenMRS need a way to manage appointments to organize what appointments are available, who is serving at that time, who is coming, and to help monitor & optimize care consistency.
- **Appointments need to go beyond just "date & time" - need to optimize** for things like: Group Appointments, Patient Notifications/Messaging, **Prevent Over-booking**, and prevent forcing patients (eg Mom/Child) to travel far when everything could be done in 1 day (eg Drug Pickup + Next Clinical Checkup).

Links to Know

- **Key Contacts: Lousa Sheenaz Yogo** UX Lead (Palladium-Kenya) & **Cynthia Kamau** Technical Lead (Palladium-Kenya)
- **Communication:** Slack channel, #appointments (most discussion and updates are happening in slack; related posts in the separate OpenMRS Talk forum are tagged appointments)
- **Designs:** described here
- **Code:** frontend: github.com/openmrs/openmrs-esm-patient-management/tree/main/packages/esm-appointments-app (note the _____ module has also been adapted here to support necessary endpoints)
- **Timeline:** Needed for real-world use by end of Sept in KenyaEMR.

Sample Visual

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Use Cases

How do we expect Appointments to be used?
System Needs

- Add Patients to a service Group
- Update Appointments
- Issue Appointments
- Get Notifications/Messaging
- Set availability of Provider

Appointments Module

- Book a certain date for a service
- View Appointments Trends
- Find Patient Set Availability of Providers
- Know who is booked today
- Generate Reports
- Set up Daily Cap per program
- Reschedule Appointments

Users

- Community Health Worker
- Registration Clerk
- Clinician

Object Oriented UX

The OOUX process allowed us to take the focus from the task and zoom out to look at the relationship of our objects and how they related to our different use cases.

After understanding that, we mapped out the required actions for each object — giving us a better understanding of the interfaces’ needs, which in return helped with prioritisation of the work.

Kick-off Pitch Video from April 2022:

General Plan
Adopt Bahmni Appointments into 3.x as a micro-frontended, carbonized application. The appointments backend for version 1.4.0 of the Bahmni Appointments module has no Bahmni-specific dependencies anymore. The frontend part isn’t part of the dev3 build and it may have Bahmni-specific dependencies.

Why Bahmni Appointments

- It’s easy to integrate - it’s a separate (React) web app also running on the OpenMRS backend. This means that with O3 one needs to run two frontends on the same backend (this is done with Nginx typically):
  - Frontend 1: O3
  - Frontend 2: Bahmni Appointments
- Backend: OpenMRS
- It’s a bridge with the Bahmni Coalition. A way to come together with Bahmni.
- It is the OpenMRS appointments app of MSF-OCIP and ICRC, and will remain as such, so that also increases the chance of ongoing maintenance.
- Iniz already provides support for some of its metadata.
- It has been tested and used in the real-world and it does the job (and it is in production virtually on all Bahmni impls out there that are recent enough to have it).

Appointment Solution Comparison Across Existing EMRs

See sub page: https://wiki.openmr.org/x/CQ7DDw

Other Reference Resources

- Bahmni Appointment Scheduling documentation (high-level, with screenshots): https://bahmni.atlassian.net/wiki/spaces/BAH/pages/32604198/Appointment+Scheduling
- 2.x RefApp Appointment Scheduling Module: https://wiki.openmr.org/x/DICiAg
- Previous User Stories / Requirements: Appointment Module

Questions

☐ Is it clear for us how each of these should appear in 3.x UI/how they should be “carbonized”? https://bahmni.atlassian.net/wiki/spaces/BAH/pages/32604198/Appointment+Scheduling
☐ We will need ability to book appointment for a day OR a time. Bahmni currently forces a time be picked.

Why isn’t Bahmni Appointment module working on spa?

Adding it triggered crash of Admin page:

Archive of Requirements Brainstorming

Pieces of Appointments:

- **Book an Appointment**
  - Outside of Patient Chart (e.g. Via a General Schedule interface)
  - Inside Patient Chart: “Add Appointment” via Appointment page
  - Inside Patient Chart: In Form workflow, set next appointment date (and see any clashing appointments)
  - By Patient themselves (out of scope)
    - Support for just date OR date and time
    - Support for no provider OR specific provider
  - Handle walk-ins or folks who come before or after their scheduled date
- See Booked Appointments: Daily View, Weekly View, Monthly View
• Outside of Patient Chart: Filter by Location, by Provider
• Inside Patient Chart: Appointments widget
• **Find and Change a Booked Appointment (e.g. change date, time, provider...)**
  • Outside of Patient Chart: General Schedule interface  Edit individual item
  • Inside Patient Chart: Appointments widget  Edit individual item
• Settings & Config (Admin-facing)