

ClinicFlow

User Manual

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1 Introduction

1.1 What is ClinicFlow?

ClinicFlow is a tool which allows clinics to: keep a record of patient activity data, generate statistics on past data, and simulate clinic environments to predict future performance.

1.2 Objective of User Manual

This manual provides an overview and guide for the core functionalities included in this product. If you have not yet created an account, please refer to section 4.

For all other inquiries, please refer to section 6. Troubleshooting. If this guide does not answer your questions, feel free to contact us: Section 6.2

1.3 Background

This tool was first developed for use at the Joseph Brant Hospital pre-operative clinic. Its functionality has since been expanded to allow the changing of clinic properties, including staff, procedures, and addition of constraints.

It was initially intended to be able to generate the schedules for the clinics, but this feature was abandoned during development for being too difficult to implement during the time allotted of the project.

1.4 Roadmap

We hope to allow this product to be implemented in any clinic environment. To do this, we have taken steps to abstract away the specific clinic we are dealing with, instead opting for a variable clinic model which can be adapted to the specific clinic using this product.

2 Legal / Copyright Info

ClinicFlow is owned and managed by the ClinicFlow team of McMaster University (See 6.2: Contact Us). The source code is available on github, and this product is licensed under GPLv3. The full text of which is available at: <https://www.gnu.org/licenses/gpl-3.0.en.html>

3 System Requirements

ClinicFlow is a web application. It requires an operating system and browser supporting:

- HTML5
- CSS3
- Javascript

Compatible browsers include:

- Microsoft Internet Explorer 10+
- Microsoft Edge
- Google Chrome
- Mozilla Firefox
- Safari

It is accessed by logging onto the Clinic Flow website, located at : *website not available*. Upon connecting to the website, the user will at the login screen and will be prompted to login before continuing.

To host ClinicFlow on your own server, you would need:

- MongoDB
- Django framework

4 Account

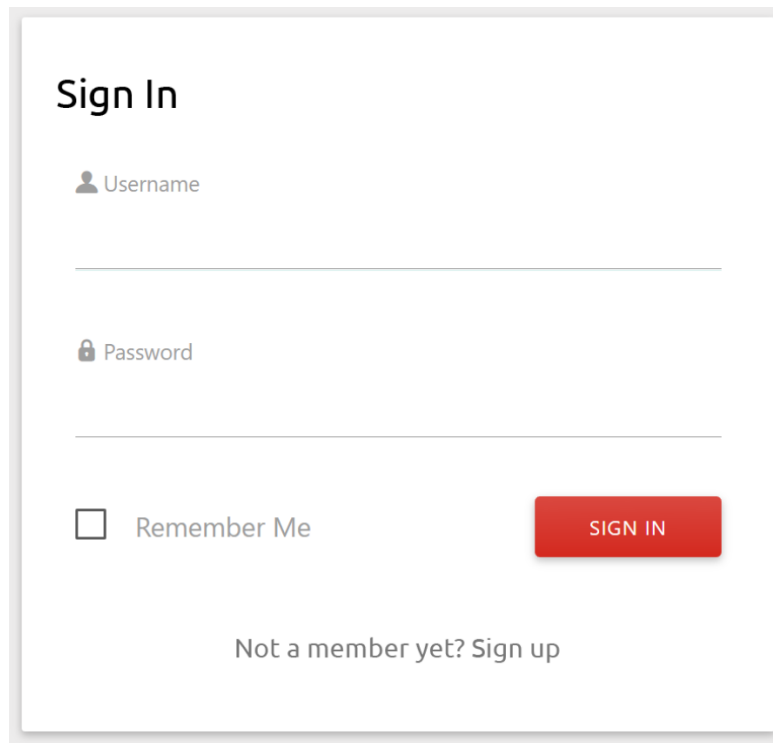
When first accessing the application, the login screen is presented. From here one can either enter an existing an account, or create a new one.

4.1 Login


The login screen consists of a Username and Password field. Both are required to login and use the application.


If you do not have an account, please refer to the Registration section (4.2)
To Sign In:

1. Enter your username into the "Username" box
2. Enter your password into the "Password" box
3. Check the "Remeber Me" button if you wish to no enter the login credentials next time
4. Click on "Sign in"

A sign-in form titled "Sign In" in bold black text. Below the title are two input fields: "Username" with a person icon and "Password" with a lock icon. Both fields have horizontal lines indicating where to enter text. Below the password field is a checkbox labeled "Remember Me". To the right of the checkbox is a red button with the text "SIGN IN" in white. At the bottom of the form is a link that says "Not a member yet? Sign up".

Sign In

 Username

 Password

☐ Remember Me SIGN IN

Not a member yet? [Sign up](#)

Figure 1: Sign in page

4.2 Registration

All users must register in order to use ClinicFlow. Registration is simple, and requires only a username and password.

If you already have an account, please refer to Login (4.1)

To Sign Up:

1. Enter a desired username into the Username field (must be unique)
2. Enter a desired password into the Password field. It must meet the following requirements:
 - Between 8 and 20 characters
 - Contain at least 1 number and 1 symbol
3. Click the "I am not a robot" checkbox.

4. Click "Sign up"

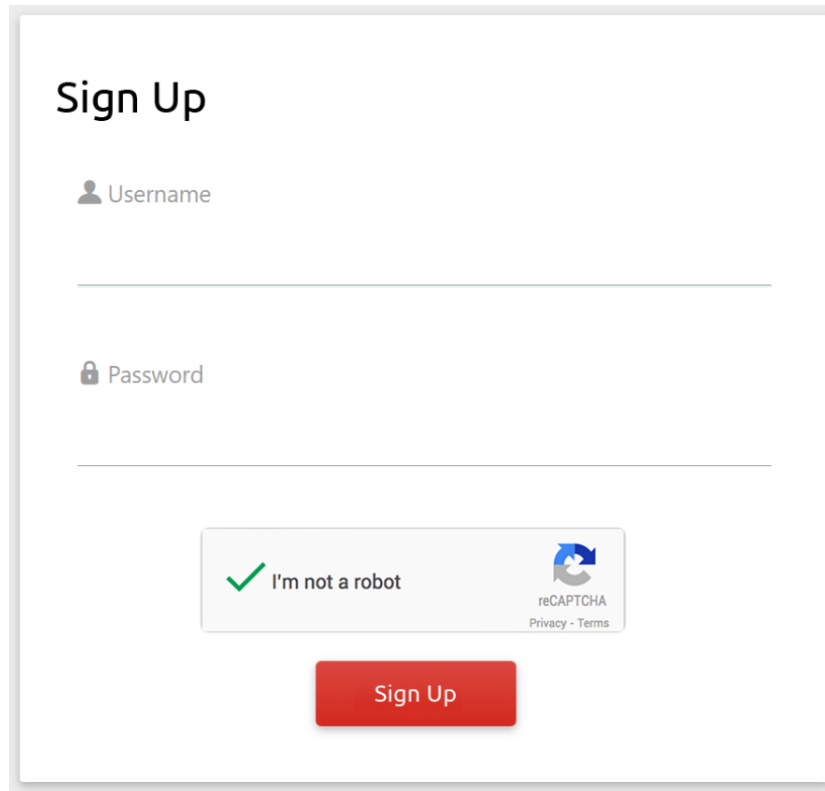
The image shows a 'Sign Up' form within a light gray border. At the top left, the title 'Sign Up' is displayed in a bold, black font. Below the title, there are two input fields. The first field is labeled 'Username' with a small person icon to its left. The second field is labeled 'Password' with a small lock icon to its left. Below these fields, there is a reCAPTCHA widget. The widget shows a green checkmark and the text 'I'm not a robot' on the left, and the reCAPTCHA logo and 'reCAPTCHA Privacy - Terms' on the right. At the bottom center of the form is a red button with the text 'Sign Up' in white.

Figure 2: Sign up page

5 Schedules

5.1 Schedule

Upon logging in, the user will be presented the schedules selection screen. From here they can either select the schedule they wish to use, or create a new schedule.

If no schedule is associated with this account, one must be created (See 5.1.1)

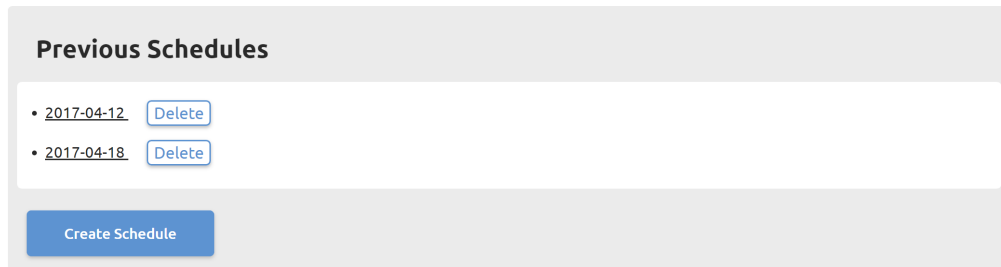


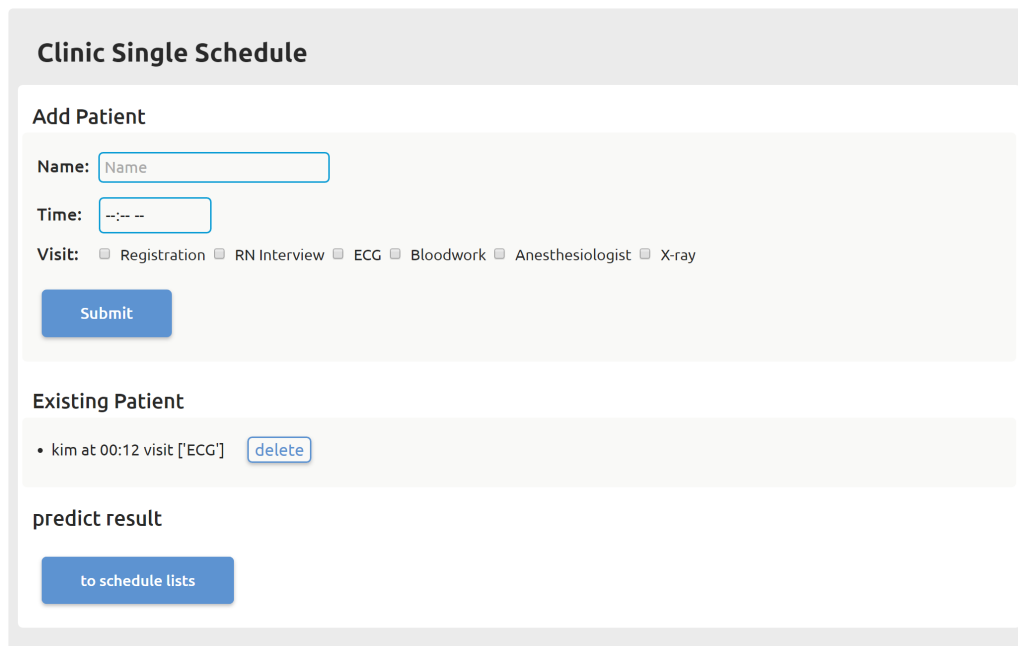
Figure 3: Viewing all previously created schedules

5.1.1 Create Schedule

To use this application, a schedule must be created it's constraints set up. To create a schedule, one must be on the "Previous Schedules screen" (See figure 3)

To create a schedule:

1. Click the "Create Schedule" button
2. Enter the available providers
3. Enter schedule date
4. Go back to the Previous Schedules screen and select your newly created schedule
5. Click into the schedule to add patients and generate simulations



The image shows a web form titled "Clinic Single Schedule". It is divided into three main sections. The first section, "Add Patient", contains a "Name:" label followed by a text input field with the placeholder "Name", a "Time:" label followed by a time selection dropdown showing "--:-- --", and a "Visit:" label followed by a row of checkboxes for "Registration", "RN Interview", "ECG", "Bloodwork", "Anesthesiologist", and "X-ray". Below these is a blue "Submit" button. The second section, "Existing Patient", shows a list item "kim at 00:12 visit ['ECG']" with a blue "delete" button next to it. The third section, "predict result", contains a blue button labeled "to schedule lists".

Figure 4: Adding patients to the schedule

5.2 Overview

This screen will show statistic about the current status of the clinic based on actual passport data.

Note: Passport data must be set up in order to use this screen (See 5.3)

5.2.1 Select Date Range

The selects the time range for which statistics will be calculated.
In order to change:

1. Click on the arrow beside the date at the top
2. Select the FROM date on the left
3. Select the TO date on the right
4. Click apply to filter the passport data to within that range

Clinic Passport							
Search by Time Range		<input type="text" value="mm/dd/yyyy"/>	<input type="text" value="mm/dd/yyyy"/>	<input type="button" value="Search"/>	<input type="button" value="Add New Passport"/>		
Reason	Service	Date	Scheduled Appointment Time	Arrival Time	Day Surgery/Admitted Surgery	Departure Time	Registration_Time_In
Left Fourth Digit Dupuytren's Release	Day Surgery	2016/9/6	7:45:00 AM	7:25:00 AM	Day Surgery	8:26:00 AM	7:38:00 AM
Right 1st Mtp Fusion	Day Surgery	2016/9/6	8:00:00 AM	7:35:00 AM	Day Surgery		7:48:00 AM
Rt Elbow Exostectomy/Mass Excision	Orthopaedic Surgery	2016/9/6	7:30:00 AM	7:45:00 AM	Day Surgery	8:53:00 AM	7:56:00 AM
Bladder Outlet Obstruction	General Surgery	2016/9/6	8:15:00 AM	8:05:00 AM	Admitted Surgery	10:07:00 AM	8:07:00 AM
Osteoarthritis Rt Hip	Orthopaedic Surgery	2016/9/6	8:45:00 AM	8:24:00 AM	Admitted Surgery	10:59:00 AM	8:36:00 AM
Microlyngoscopy W Excision of R Vocal Cord Lesio	Day Surgery	2016/9/6	9:00:00 AM	8:45:00 AM		11:25:00 AM	9:12:00 AM
Osteoarthritis Rt Hip	Orthopaedic Surgery	2016/9/6	9:15:00 AM	9:02:00 AM	Admitted Surgery	10:15:00 AM	9:36:00 AM
Pregnancy	Labour and Delivery	2016/9/6					9:25:00 AM
Bilateral				9:20:00			

Figure 5: Overview of Clinic

5.3 New Passport

This section allow the user to add new passports. This data is used to provide summary statistics of the clinic environment, as well as help build a model of the clinic for simulation purposes.

Note: In order to add new passport, the schedule must have a set of constraints associated with it (See 5.5)

To add a passport:

1. Click the "Add New Passport" button
2. Enter the passport information, including reason for visit, scheduled arrival time, and required procedures
3. Click "Add Passport"

To remove a patient:

1. Click the "X" button beside the patient name in the list
2. Click "Apply"

New Passport

Reason for Visit

Service

Date

Scheduled Appointment Time

Arrival Time

Day Surgery/Admitted Surgery

Departure Time

Add Passport

Registration Time in

Registration Time out

Registration Comment

LaboratoryECG Time in

LaboratoryECG Time out

LaboratoryECG Comment

Anesthesiologist Time in

Anesthesiologist Time out

Anesthesiologist Comment

RNInterview Time in

RNInterview Time out

RNInterview Comment

LaboratoryBloodwork Time in

LaboratoryBloodwork Time out

LaboratoryBloodwork Comment

X-Ray Time in

X-Ray Time out

X-Ray Comment

Figure 6: Overview of Clinic

5.4 Simulate

This section of the application allows the user to simulate a model clinic environment.

If no schedule/rule set has been created, the user must create one first (See 5.4.2)

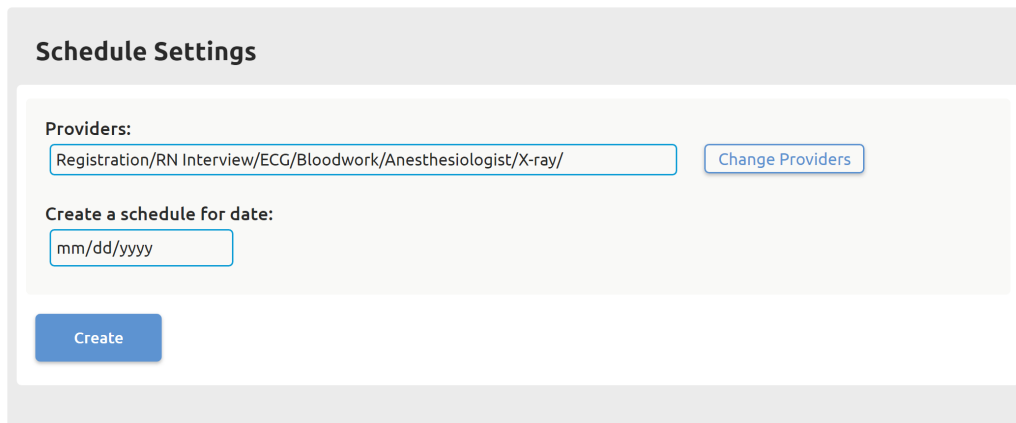
5.4.1 Simulation Selection

This screen shows a list of stored simulation models.

To select a simulation, click on the name of simulation.

5.4.2 Create Model

This function allow the user to create a new simulation model. This is required in order to run simulations.



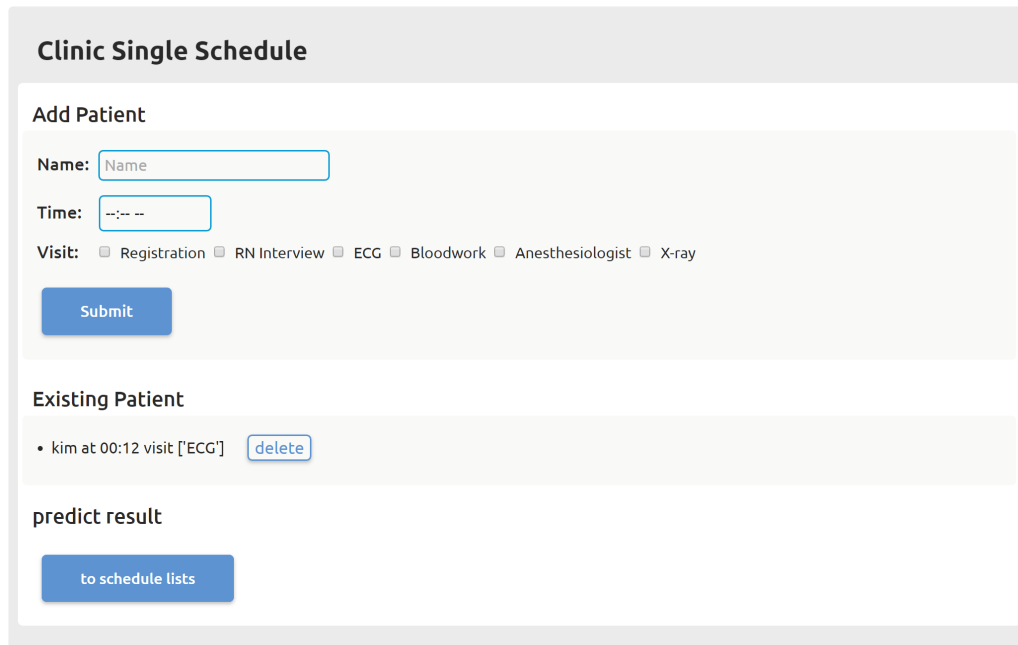
The screenshot shows a web form titled "Schedule Settings". Inside the form, there is a section labeled "Providers:" with a text input field containing "Registration/RN Interview/ECG/Bloodwork/Anesthesiologist/X-ray/" and a "Change Providers" button. Below this is a section labeled "Create a schedule for date:" with a text input field containing "mm/dd/yyyy". At the bottom of the form is a blue "Create" button.

Figure 7: Creating simulation

To create a simulation model:

1. Click "Create Model"
2. Click "Use constraint info" (skip to 5) or Fill in details (steps 3-4)
3. Enter patients to simulate
 - (a) Click "Add patient"
 - (b) Enter name, arrival time, and required procedures
4. Enter constraints to adhere to
 - (a) Enter providers, staff, and prerequisites

5. Click "Create"



The image shows a web form titled "Clinic Single Schedule". It is divided into three main sections. The first section, "Add Patient", contains a "Name:" label followed by a text input field with the placeholder "Name", a "Time:" label followed by a time selection dropdown showing "--:-- --", and a "Visit:" label followed by a row of checkboxes for "Registration", "RN Interview", "ECG", "Bloodwork", "Anesthesiologist", and "X-ray". Below these is a blue "Submit" button. The second section, "Existing Patient", shows a list of patients with one entry: "kim at 00:12 visit ['ECG']", which has a blue "delete" button next to it. The third section, "predict result", contains a blue button labeled "to schedule lists".

Figure 8: Add Patients to Simulation

5.4.3 Results

This screen shows statistics from the last simulation. If no simulation has been performed, only the simulation selection screen will be visible.

In order to simulate a model, click on the "Simulate" button beside the model in the list.

The results screen shows statistics such as mean procedure time, waiting time, total clinic operation time.

5.5 Constraints

This section allows the user to change the constraints for the current clinic.

All 3 sections must have their properties set in order to use the passport feature, as well as to use constraint info in a simulation model.

5.5.1 Change Providers / prerequisites / staff

This section allow the user to set the list of providers available in the clinic.

In order to add a provider:

1. Click the "+" button under "Providers" to add an additional provider.
2. Enter the name of the provider in the new text box
3. Click Apply to save the list of providers

In order to set the prerequisites:

1. Click the "+" button under "Prerequisites" to add a prerequisite
2. Enter the before procedure
3. Enter the after procedure
4. Click "Apply" to save the list of prerequisites

In order to set the staff:

1. Click the "+" button under "Staff" to add a staff member
2. Enter their name
3. Enter the procedures they can provide
4. Enter their start, end, and break times.
5. Click "Apply" to save the list of staff

5.6 Settings

This section allows the user to change setting related to their account

5.6.1 Change Password

The user can change the password for their account:

1. Click on "Change Password"
2. Enter current password
3. Enter current password again
4. Enter new password
5. Click "Apply"

5.6.2 Change Clinic Name

The user can change the name of any clinic associated with their account To do this:

1. Click "Change clinic name"
2. Select clinic whose name to change
3. Enter new name for clinic
4. Click "Apply"

6 Troubleshooting

6.1 FAQ

This section provides information on commonly asked questions regarding the operation of product.

1. Why do I not see a list of clinics?
 - You must be signed in, and have at least 1 clinic create in order to see the list of clinics. See 4.1, 5.1.1.

2. Why do I not see a passport?

- You must enter the clinic constraints and patient data in order to see the passport and statistics. See 5.5, 5.3

6.2 Contact Us

If you have any further questions contact us at:

- huw7@mcmaster.ca
- vasilie@mcmaster.ca
- knopf@mcmaster.ca
- yum27@mcmaster.ca
- li544@mcmaster.ca

7 Definitions

- Account: An entity identified by username and password credentials. Contains clinics.
- Clinic: An entity consisting of a passport and constraints.
- Passport: A spreadsheet of past clinic data, including patient arrival time, procedure duration, and departure time.
- Constraints: Rules regarding clinic behavior, used in simulation